# CMVIDII YMAR BOOKK <br> <br> 10187 

 <br> <br> 10187}


## Hin IITHITIIIII



## CHIDII YEAR BOOK 1967

OFFICIAL STATISTICAL ANNUAL OF THE RESOURCES, HISTORY, INSTITUTIONS AND SOCIAL AND ECONOMIC CONDITIONS OF CANADA

Published by Authority of
The Honourable Robert H. Winters
Minister of Trade and Commerce

DOMINION BUREAU OF STATISTICS
Canada Year Book Division


## (ㄷ) Crown Copyrights reserved

Available by mail from the Queen's Printer, Ottawa, and at the following Canadian Government bookshops:
hallfax: 1737 Barrington St . OTTAWA: Daly Building, corner Mackenzie Ave. and Rideau St.
toronto: 22I Yonge Street
montreal: Eterna-Vie Building, 1182 St. Catherine St. West
Winnipeg: Mall Center Bldg., 499 Portage Ave.
vancouver: 657 Gramville Sr .
or through your bookseller
A deposit copy of this publication is also available for reference in public libraries across Canada

## Price: (cloth-bound) $\$ 5.00$ <br> Catalogue No. CS 11-202/1967 <br> (paper-bound) $\$ 3,00$ <br> Catalogue No. CS 11-205 /1967

Roger Duhamel, f.r.s.c.
Queen's Printer and Controlter of Stationery
Ottawa, Canada
1967

69014

## PREFACE

The year 1967 is Canada's Centenary of Confederation and throughout these one hundred years the story of the country's progress-economic, social and legislative-has been recorded in the Canada Year Book. This publication, from small beginnings in 1867 when statistical and other official information was meagre, has developed to its present form and now encompasses, sometimes in brief and sometimes in detail, the great mass of atatistical information that has become available through the Dominion Bureau of Statistics, supplemented by social and legislative data from other Departments of Government and from the provinces. Year by year, the Canada Year Book endeavours to fulfil the formidable task of keeping pace with the rapidly changing economic life of the country. Thus, the whole series of Year Books constitutes an official record of a century of Canada's progress.

The 1967 edition is not a "historical" edition because of the great amount of current data that must be presented, but follows the established policy of including in each chapter the latest information procurable at the time of printing, the emphasis changing with progress and developments in the field covered, and adding new data when available. In this edition, specially prepared articlea or chapter material are included on "Growth of Geographical Knowledge of Canada" (pp. 1-6), "Geology and Economic Minerals of Canada" (pp. 19-32), "The Climate of the Canadian Arctic" (pp. 55-74), "Federal Assistance in Livestock Improvement" (pp. 453-457), "Manufacturing and the Changing Industrial Structure of the Canadian Economy, 1946-65" (pp. 665-678), "History of the Labour Movement in Canada" (pp. 773-781), "An Outline of the Development of Civil Air Transport in Canada" (pp. 838-843), "The Development of Telecommunications in Canada" (pp. 862-869) and "Canada's Participation in the Changing Pattern of World Trade, 1953-66" (pp. 953-966). A 140-mile-to-the-inch political map of Canada is inserted in a back-cover pocket.

The volume was produced in the Canada Year Book Division by Miss Margaret Pink, Associate Editor, and the Year Book staff under the editorship and direction of Dr. C. C. Lingard, Director of the Division. The charts and maps, except where otherwise indicated, were prepared by or under the direction of L. Tessier of the Drafting Unit. The frontispiece is a photograph by Malak from the National Film Board of Canada Centennial publication Stones of History-Canada's Houses of Parliament. Credits for the other photographic illustrations used throughout the publication are listed on p. iv.

The co-operation of numerous officials of the various Departments of the Federal and Provincial Governments and of this Bureau in the preparation of material for the Year Book is gratefully acknowledged. Credit by means of footnotes is given where possible, either to the persons or to the public service concerned.

$$
\text { Maiter } \delta \text { Auffect. }
$$

Dominion Statisticlan

## Dominion Bureau of Statistics, Ottawa, March 1967

## TABLE OF CONTENTS

Page
Maps and Charts. ..... $\%$ v
Рното Credits. .. ..... iv
Weights and Measures and Other Interpretative Data. ..... vii
Interpretation of Symbols. .... ..... viii
Chapter
I Physiography and Related Sciences. ..... 1
II Constitution and Government. ..... 78
III Population ..... 182
IV Immigration and Citizenship ..... 215
V Vital Statistics. ..... 235
VI Public Health, Welfare and Soclal Security ..... 277
VII Education ..... 337
VIII Scientific and Industrial Research. ..... 382
IX Crime and Delinquency.. ..... 412
X Land Use and Renewabla Resource Development. ..... 439
XI Agriculture. ..... 448
XII Forestry.. ..... 508
XIII Mines and Minerals. ..... 536
XIV Fisheries and Furs. ..... 597
XV Electric Power. ..... 634
XVI Manufactures. ..... 665
XVII Capital Expenditures, Constrdction and Housing. ..... 705
XVIII Labour. ..... 731
XIX Transportation ..... 785
XX Commonications. ..... 861
XXI Domestic Trade_and Pricets. ..... 896
XXII Foreign Trade. ..... 953
XXIII Public Finance.. ..... 1015
XXIV Trends in Economic Aggregates. .. ..... 1068
XXV Baneing, Other Commerclal Finance and Insurance. ..... 1118
XXVI Defence. ..... 1167
XXVII Official Sources of Information and Miscellaneous Data. ..... 1185
Books About Canada. ..... 1185
Directory of Sources of Official Information.. ..... 1204
Special Material Published in Former Editions of the Canada Year Book. ..... 1236
Register of Official Appointments. ..... 1240
Federal Legislation, 1966-67 .. ..... 1247
Canadian Chronology ..... 1254
Appendix I.. .. ..... 1261
Appendix II. ..... 1262
Index.... ..... 1263

## PHOTO CREDITS

| Frontispiece............. | National Film Board |
| :---: | :---: |
| Title page......... | Malak, Ottawa |
| Facing p. 1......... | George Hunter, Toronto |
| p. 5. | Department of Energy, Mines and Resources |
| p. $75 \ldots \ldots$. | The Globe and Mail, Toronto |
| Facing p. 82......... | Malak, Ottawa |
|  | Department of National Health and Welfare |
|  | National Research Council of Canada |
|  | Canada Department of Agriculture |
| Facing p. 182...... | George Hunter, Toronto |
| p. 234. | The Gazette, Montreal |
| p. $338 . \ldots . . .$. | National Film Board |
| p. $367 . . . . .$. | The Globe and Mail, Toronto |
| p. 381. | National Research Council of Cauada |
| p. $470 .$. | National Film Board |
| p. $480 .$. | National Film Board |
| p. 488. | Malak, Ottawa |
| p. $533 .$. | Bus and Truck Transport, Toronto |
| p. 596...... | Fisheries Association of British Columbia, Vancouver |
| p. $635 . . .$. | The Hydro-Electric Power Commission of Ontario, Toronto |
| p. $663 . . .$. . | National Film Board |
| p. 686...... | Dominion Engiveering Works, Ltd., Montreal |
|  | Interprovincial Co-operatives Ltd., Winnipeg |
| Facing p. 686...... ... | Canadian Westinghouse Company Limited, Hamilton |
|  | Outboard Marine Corporation of Canada Ltd., Peterborough, Ont. |
|  | Canada Packers, Toronto |
| p. $696 . \ldots \ldots$. | Vulcan Containers (Canada) Ltd., Rexdale, Ont. |
| p. $730 \ldots \ldots$. ... .. | The Globe and Mail. Toronto |
|  | The Bell Telephone Company of Canada, Montreal |
| p. $789 \ldots \ldots$ | Canadian National Railways |
| Facing p. 840......... | Air Canada |
|  | National Aviation Museum |
|  | Archives of Canada |
|  | National Film Board |
|  | Canadian Aviation, Ottawa |
|  | Northern Helicopters Ltd., Vancouver |
|  | Pacific Western Airlines Ltd., Vancouver |
| p. 867......... | The Bell Telephone Company of Canada, Montreal |
| p. 875...... | National Film Board |
| p. $999 . \ldots \ldots$. | Canada Department of Agriculture |

## MAPS AND CHARTS

Pagr
Map: Political Map of Canada.... Inside back cover
Maps: Section of the Canadian Shield showing knowledge available in 1940 compared with that available in 1966 ..... 6
Map: Drainage Basins of Canada ..... 10
Chart: Geological Time Chart ..... 20
Maps: Geological Regions of Canada.
Divisions of the Canadian_Shield ..... 21
Chart: Stratum Deposited during Melting of an Ice-Sheet. ..... 30
Chart: Aeromagnetic Compilation ..... 31
Map: Mean Daily Temperatures in Northern Canada for January ..... 73
Map: Mean Daily Temperatures in Northern Canada for July ..... 74
Map: Time Zones of Canada. ..... 77
Chart: Organization of the Government of Canada. ..... 130
Chart: Vital Statistics Rates, 1925-64 ..... 241
Chart: Age-Specific Death Rates, 1964 ..... 252
Chart: Main Causes of Death, 1931 to 1964. ..... 255
Chart: Causes of Infant and Neonatal Deaths, 1964 ..... 260
Chart: Maternal Deaths. ..... 264
Chart: Expenditure on Health and Social Welfare by All Levels of Government, Years Ended Mar. 31, 1946-65. ..... 325
Chart: Expenditure on Health and Social Welfare by All Levels of Government with Per- centages of Total Government Expenditure, Net National Income and Gross National Product, Years Ended Mar. 31, 1951-65. ..... 327
Chart: Estimated Student Retention to Specified Levels of Education, 1960 and 1965. ..... 338
Chart: Cash Receipts from Farming Operations, 1956-65 ..... 470
Chart: Per Capita Consumption of Meat, 1946 and 1965. ..... 480
Chart: Per Capita Consumption of Dairy Products, 1946 and 1965. ..... 488
Maps: Mineral References-Newfoundland ..... 544
Maritime Provinces. ..... 545
Quebec ..... 546
Ontario. ..... 547
Prairie Provinces ..... 548
British Columbia. ..... 549
The Yukon and Northwest Territories. ..... 550
Chart: Growth in Electric Power Generating Capacity in Canada, 1917-70 ..... 635
Chart: Utilization of Power. ..... 637
Chart: Employment in the Manufacturing Industries, 1946-64. ..... 667
Chart: Shipments, Exports and Imports of Manufactured Goods, 1946-64 ..... 699
Maps: Scheduled Air Routes 1940 and 1967. ..... 840
Chart: Supply and Disposition of Canadian Wheat, Crop Years Ended July 31, 1956-65 ..... 910
Chart: Canadian Trade Trends, 1953-66. ..... 954
Chart: Trends of World Imports by Major Markets, 1953-65. ..... 956
Chart: Trends of World Trade by Commodity Groups, 1953-65. ..... 958
Chart: Direction of World Trade, 1953-65 ..... 960
Chart: Canada's Share of World Market, 1953-65. ..... 962
Chart: Canada's Share of Selected Markets, 1953-65 ..... 964

## WEIGHTS AND MEASURES AND OTHER INTERPRETATIVE DATA

In Canada as a rule the Imperial system of weights and measures is followed; an exception is the ton where, unless otherwise stated, the short ton of $2,000 \mathrm{lb}$. is meant.

## Relative Weights and Measures, Imperial and United States

The following list of coefficients may be used to translate amounts expressed in one unit to the other. Where reference is made to Imperial pint, quart and gallon, their equivalent in ounces is also in Imperial measure; likewise United States designations for these quantities are shown in the U.S. equivalent in ounces. The Imperial (or British) fluid ounce and the U.S. fluid ounce are different measures. One Imperial fluid ounce equals $0.96 \mathrm{U} . \mathrm{S}$. fluid ounce and one Imperial gallon equals $1.2 \mathrm{U} . \mathrm{S}$. gallons.
Imperial pint $=20$ fluid ounces
U.S. pint $=16$ fluid ounces
1 Imperial quart $=40$ fluid ounces
1 U.S. quart $=32$ fluid ounces
1 Imperial gallon $=160$ fluid ounces
1 U.S. gallon $=128$ fluid ounces
1 Imperial proof gallon $=1.36$ U.S. proof gallon

1 short ton $=2,000$ pounds
1 long ton $=2,240$ pounds
1 barrel crude petroleum $=35$ Imperial gallons
1 ounce avoirdupois $=0.91146$ ounce troy (oz.t.)
1 statute mile $=5,280$ feet
1 nautical mile $=6,080$ feet

The following weights and measures are used in connection with the principal field crops and fruit; 2.3 bu . of wheat are required to produce 100 lb . of flour.

|  | Pounds per Bushel |  | Pounds per Bushel |
| :---: | :---: | :---: | :---: |
| Grains- |  | Fruits (standard conversions)- |  |
| Wheat. | 60 | Apples. .. | 45 |
| Oats.... | 34 | Pears, plums, eherries, peaches, |  |
| Barley and buckwheat. | 48 | grapes and apricots... | 50 |
| Rye, flaxseed and corn... | 56 | Strawberries and raspberries |  |
| Rapeseed and mixed grains... | 50 | (per qt.) | 1.25 |
| All others...... | 80 |  |  |

## Fiscal Years of Federal and Provincial Governments

The fiscal year of the Federal Government and of each of the ten Provincial Governments ends on March 31. Throughout the Year Book, all figures are for calendar years except where otherwise indicated in text or table headings.

[^0]The interpretation of the symbols used in the tables throughout this publication is as follows:figures not available.
... figures not appropriate or not applicable.

- nil or zero.
-     - amount too small to be expressed or where "a trace" is meant.

P preliminary figures.

- revised figures.


The vastness of Canada's territory posed a tremendous task for the early surveyors. Following a system devised in 1871, consisting of townships six miles square, each containing 36 sections of 640 acres, the Dominion Land Surveyors began to lay out the huge prairie chequerboard, using the 49 th parallel as the southern boundary and ranging east and west of the prime meridian established that year in the vicinity of Emerson, Manitoba. About one third of the distance between the 49 th and 60 th parallels across the whole width of the prairies was completed by 1910 and with only minor adjustments these early survey lines remain today. From above the great Regina plain, the section lines bounding the east and west sides of the townships can be seen to run straight through to the horizon.

## CHAPTER I.-PHYSIOGRAPHY AND RELATED SCIENCES

## CONSPECTUS

Paog PageSection 1. Federal and ProvincialPdblic Lands.....33
Subsection 1. National Parks. ..... 35
Subsection 2. Provincial Parks ..... 41
Subsection 3. Ottawa, Canada's National Capital. ..... 46
Section 2. Wildlife Resodrces and Coneervation. ..... 49
Part III.-Cilmate and Time Zones ..... 52
Section 1. Climate ..... 52
Special Abticle: The Climate of the Canadian Arctic...... ..... 55
Section 2. Meteorological Obberving Stations ..... 75
Section 3. Standard Time and Time ..... 76

The interpretation of the symbola used in the tables throughout the Year Book will be found on $p$. viti.

## PART I.-GEOGRAPHY AND GEOLOGY

## GROWTH OF GEOGRAPHICAL KNOWLEDGE OF CANADA*

In area, Canada is among the world's leading countries for, although less than half the size of the Soviet Union, it is larger than China, the United States (including Alaska and Hawaii) or Brazil. Yet its population of about $20,000,000$ is relatively small. It may be wondered how thoroughly this enormous land has been mapped-to what extent, its physical features have been located and described and how much of its territory is in fact known and at the disposal of its inhabitants. A preliminary answer to these questions may come from tracing the growth in knowledge of Canada's geography during the hundred years since 1867. Although today it is possible to speak of a nation extending "from sea to sea and pole to borderland", this was far from being so at its founding. The Canada created by the British North America Act in 1867 was limited to the St. Lawrence Valley, to the northern margins of the Great Lakes (its exact extent into the hinterland being undefined) and to New Brunswick and Nova Scotia. The new Canada had an area of 384,598 sq. miles and a population of about $3,300,000$. In essence, it was a nation built around the Gulf of St. Lawrence and penetrating inland only as far as its headwaters reached. This neat and essentially maritime concept was very soon breached, and the immense task of creating a new nation on the northern half of the North American Continent began.

[^1]The first formal addition was Manitoba, a minuscule ( 14,350 sq. miles), postage-stamp-like province formed around the nucleus of the Red River Settlement. Of greater ultimate significance was the transfer at that time of title to the vast lands of the Hudson's Bay Company, first chartered two centuries before. This brought under Canadian oovereignty the region of Rupert's Land and the North-Western Territory, much of it still terra incognita. A year later British Columbia was added, establishing for the first time the 60th parallel of latitude as the northern limit of a province, a line to become eventually a major feature of the map of Canada and to be demarcated on the ground with great precision from the Pacific Ocean to Hudson Bay. The addition of Prince Edward Island in 1873 rounded out the Maritime Provinces-but Newfoundland (including Labrador) was not to join Confederation until 1949. Thus, the familiar outline of provincial and territorial boundaries fell into place relatively quickly and all (except Newfoundland) have now been in existence for more than half a century. Alberta and Saskatchewan date from 1905 and Manitoba, Ontario and Quebec reached their present limits in 1912. What of the surviving portion of the old Northwest Territories lying beyond the 60th parallel? Early uncertainty as to the northward extent of Canada had been ended with cession by Britain in 1880 of the islands lying north of the mainland. To the west of the Mackenzie River basin lay Yukon Territory, of which the boundaries were first drawn in 1895. By 1912 the Northwest Territories had attained its present limita. Except for the change in the status of Newfoundland, the political map of Canada was stabilized within 45 years of Confederation. In this, of course, are considered only lines on maps or definitions in legal documents; conditions on the ground itself were far less clearly known, since there remained large unexplored areas not only in the Far North but well within the limits of the provinces themselves.

In territorial extent, Canada relatively early on became a large but compact country extending from Atlantic to Pacific in the higher latitudes, and also fronting on the Arctic Ocean. Two minor aspects of its external limits should be mentioned. In the west, Yukon Territory and northern British Columbia are excluded from actual contact with the ocean by a southerly extension of Alaska, the so-called "panhandle" The seaward extent of Canadian sovereignty in the Far North has been less than precisely known. Canadian maps have customarily shown lines extending from the easterly and westerly limits of the country along the 60th and 141st lines of longitude as far as the North Pole, with the declared intention of claiming any new lands that may be found within these limits. In view of the advanced state of geographical knowledge in the Arctic today, the lines are probably no longer significant.

Filling in the map of Canada with topographical detail has been a long and exacting task, which remains far from completed. Exploration began (if one excludes the pioneering travels of Indians and Eskimos) about a thousand years ago with the arrival of Vikinge from Greenland. Details of their discoveries, and those of others who may have followed them until the fifteenth century, have not survived but the records of later voyages include some of the most illustrious navigators and explorers in history. Canada has been singularly fortunate in its geographical pioneers-the Cabots, Cartier, Frobisher, Davis, Hudson, Baffin, Cook, Thompson, Ross, Franklin, Sverdrup, Amundsen, Stefansson and many others.

A pattern of exploration evolved which was determined by the initial approach from Europe and the conflguration of the Atlantic shoreline. The St. Lawrence estuary invited search and this led on to the Great Lakes and the interior of the Continent and then by waterways to the northwest, to the Arctic and to the Pacific. Farther north, the search for a western sea and the route to Asia led by way of Hudson Strait into the Bay, but failure to find an outlet there forced the search still farther north, through Davis Strait and Baffin Bay and then westward, where it was long frustrated by the complex of islands and narrow channels and by the summer ice.

In the south, the old westward route from the St. Lawrence was eventually followed up in the railway era, when the Canadian Pacific skirted the Great Lakes route to the Red River and then atruck out across the prairies to the Rocky Mountains where river
valleys eventually led to the coast. Hence, it was in these lower latitudes that major geographical exploration was focused immediately following Confederation. Reconnaissance surveys were carried out by government parties in the 1870 s and by 1880 the Geological Survey of Canada (in those days a comprehensive scientific survey) was probing and mapping the region between Edmonton and the coast. Such early maps were a pot-pourri assembled from new traverses by field surveyors, information from exploration by Alexander Mackenzie a century earlier and the reports of Indians. It was in those years that such features as the Peace River appeared on the map for the first time with reasonable accuracy, and then was recorded the first systematic description of that river's canyon, now, nearly 80 years later, the site of a large hydro-electric development.

It is to the need for accurate location of railway routes and the subdivision of prairie farm lands that is owed the very rapid reconnaissance mapping of the area between Lake Superior and the mountains. As air travellers today cross the prairies in a few hours, they can discern below one of the most distinctive of man's imprints on the earth's surface, the uniform pattern of squares and of meridians, range-lines and townships placed there by land surveyors in the closing years of the nineteenth century. On the sure foundation of this early work there $h_{\perp}$ followed series after series of topographic and other maps, and the work continues with increasing refinement.

Elsewhere, what might be termed the 'pre-scientific' era of geographical exploration continued longer. Because of early work by government geologists and surveyors (Ogilvie in the Yukon and Mackenzie areas, Low in Ungava and Bell, the Tyrrells and others south and west of Hudson Bay) and by others before them, the major features south of the Arctic Circle were outlined by the early years of the present century. It was already apparent that the need was now for more systematic, comprehensive surveys and for a steadily expanding, government-sponsored scientific study of the whole country

Farther north, scientific surveys were longer delayed, in the remoter regions until as late as the mid-1940s. Prior to this, notable contributions to exploration of the Arctic islands by non-Canadians were made by Nares of the British Admiralty (1875); Sverdrup of Norway (1898-1902), working among the more easterly of the islands, has left reminders of the range and thoroughness of his work in many Norwegian place names; and Peary and others explored Ellesmere Island in 1906 and 1909. Amundsen by his voyage (1903-06) from Atlantic to Pacific along an aretic route finally completed the Northwest Passage. His arrival in the Western Arctic coincided with the first journey there by Stefansson, who continued active exploration until 1918. It was he who added the last of the major discoveries to the map of Arctic Canada and who initiated the major participation by Canadians in northern exploration. He combined great ability as a traveller with the advantages of scientific training. At about the same time, an able and determined Canadian seafarer, Captain J. E. Bernier, began a long series of exploratory voyages in the Eastern Arctic.

The era of the large polar expeditions to Northern Canada ended with the First World War and from the 1920 s on there began less wide-ranging and more systematic studies of topography, geology, biology, magnetism and other disciplines, greatly aided by improved technology, including the use of aireraft and radio. Formal government participation now became more usual, particularly in broad surveys, while the gifted amateur undertook detailed studies of limited areas.

The burst of government activity in the North during the 1920s, although short-lived, carried a small but very able group of field scientists even beyond the mainland. No attempt to map the whole area could be made but the location of a few places was fixed astronomically and the general arrangement of the chief land masses determined more surely. The modest degree of precision can be judged from a statement in 1930 that "the most easterly point of Baffin Island is in approximately longitude $62^{\circ} \mathrm{W}$ and on or near the Arctic Circle" A few years before the location of Cape Dorchester, one of the main features on the west coast of that island was shifted about 60 miles southward and a large new bay introduced, this by a visiting American expedition. In those days there was scarcely a point on the map of Northern Canada which could not benefit from the attention of such
summer visitors and many lakes, headlands and islands still awaited discovery and naming. On the whole, the geography of Northern Canada remained a patchwork affair, assembled from the results of expeditions, some of them centuries old. By the 1920s, however, it was beginning to be possible to tie the information together with some assurance. Annual government expeditions by sea between 1922 and 1929 seemed a very promising beginning to a plan to explore and map the whole of the North but policies changed and no major advance proved possible for more than a decade.

Faced with the enormous task of providing accurate maps of Canada, the available resources were quite naturally marshalled for use in the South. As late as 1927 the basic geodetic network, the foundation of all really accurate maps and the locating of specific points within the country, was still edging its way through the southern part of the provinces. It would be decades before anything comparable would become possible in the Arctic. However, maps there had to be, even to remote regions, and they were produced using the best data available. In the early 1940s topographic mapping to a scale of eight miles to the inch finally reached the shores of the polar sea. That the information came in large part from early and sometimes single explorers and was often far from accurate, was less important than that the maps existed. Canada had at last been delimited after a fashion. Dotted lines showed uncertain coasts and large blank areas revealed little but the state of topographic ignorance, yet the maps set the stage for the major surveying and mapping campaign that soon followed.

Systematic exploratory surveys in the North were first undertaken by the Federal Government after the First World War. They were, in effect, an extension into higher latitudes of the techniques that had been used on the prairies, in the western Cordillera and on the southern part of the Canadian Shield. The search for minerals was moving northward and maps were needed to assist geologists and prospectors; improved administration of the area was urgent, as was better transportation.

If only for reasons of convenience, the area that benefited first was the Mackenzie Valley. Although not remote, it was described by Charles Camsell in 1921 as an area about which very little was known. In that year surveys were extended northward from Alberta along the waterway and down to the Arctic Coast. This was a combined operation by topographic surveyors, geologists, hydrographers and geodesists. As a consequence, the Valley was linked securely to Southern Canada and a framework laid down so that more detailed exploration and mapping could go ahead. For the first time there were maps of the Mackenzie River itself-along which stern-wheeled steamers had been navigating by faith and the skill of Indian pilots for several decades. How much remained to be done is illustrated by the fact that Great Slave Lake, a water body of nearly $11,000 \mathrm{sq}$. miles discovered by Samuel Hearne in 1771 and crossed by Mackenzie in 1789, was not shown on maps with even reasonable accuracy until 1924. The major attempt to extend mapping northward by traditional means demonstrated clearly that, without new time- and laboursaving techniques, the task would be all but impossible. The introduction of sircraft and radio eventually transformed this situation.

During the 1930s, surveying and cartographic techniques were being tried out which, when perfected, made it possible to complete the first mapping of Canada within a few years. It was the aerial camera that made this practicable and much of the original experimentation was carried out under the urgent need to map the North. In its early stages, using oblique air photographs which included the horizon, the detail was transferred to paper with the aid of an ingenious perspective grid etched on a glass plate. This method happened to be particularly useful on the relatively level, lake-strewn Canadian Shield. Vertical photographs were also used but they covered a smaller area so that the mapping took longer. In the more rugged western mountains, the camera was also useful but, because aircraft could not then be employed, rounds of photographs were taken from the higher peaks.

During the Second World War more dependable and longer-range aeroplanes became available, along with more elaborate cameras and plotting equipment, and the coverage of Northern Canada went ahead swiftly. At first the trimetrogon system was used, by which a high-flying aeroplane carried three cameras, simultaneously photographing ahead and to
both sides of the flight line. Exact location of ground control points was still needed and here again air transport was invaluable for by this means survey teams could be moved quickly from place to place and the field season was greatly extended because shipping was no longer needed. From 1948 onward, helicopters were also used. As a result of such technological changes, most of Canada (including the Arctic Archipelago) was covered with vertical air photography, suitable for small-scale mapping, by the late 1950s. At the same time, even more rapid survey methods were being introduced utilizing such electronic distance-measuring devices as shoran and telurimetry.

Perhaps geological surveying realized the most dramatic results from the use of helicopters and related instrumentation. It has been estimated that between 1842 and 1951 the Geological Survey mapped about $1,000,000$ sq. miles of the land surface of Canada; during the next seven years about 500,000 sq. miles were mapped, largely attributable to use of helicopters. This advance has been particularly striking in the Arctic islands where access is difficult, the climate is often very severe and local bases for supply are scarce. In place of the traditional means of transport-dog team, canoe and foot-the Geological Survey in 1955 introduced to the area a carefully planned system of helicopter transport to carry personnel, instruments and supplies. Air photographs provided the needed topographic details. This experiment proved to be efficient, safe and economical and set the pattern for all later field operations in the North. The more elaborate and continuing Polar Continental Shelf Project, covering in effect the most northerly Arctic islands and including all aspects of science, depends largely on this means of transport and observation.

Even the most casual comparison of maps published 25 years ago with those now available demonstrates the notable increase of knowledge of the northern part of the country The Canadian Shield is shown to be a maze of large and small lakes and complicated water courses where once it appeared as a more or less empty plain and a few large bodies of water, with supplementary detail along the explorers' canoe route. The shapes of land masses have changed and islands appear where none were before. Prince Charles Island in


A laden helicopter arriving at a geographers' base camp on the east coast of Baffin Island. The use of the helicopter has made possible much of the recent advance in knowledge of the physical geography of Canada's North, for by this means personnel, instruments and supplies can be transported quite readily to remote or otherwise inaccessible areas.

Foxe Basin was added to the map following its sighting from the air in 1948 in a region thought to be reasonably well known. Borden Island, discovered 50 years ago by Stefansson, was shown by air photographs to be in fact two islands, the second of which was then named after Mackenzie King. Bathurst Ieland was revealed as a veritable archipelago and the northern coast of Melville Island was changed almost beyond recognition. Topographical detail has now been added to the maps, with careful contouring replacing such notations as that on Baffin Island "mountains believed to rise to 6,000 feet" In place of geological maps based on random sampling at convenient points along the shoreline, detail can now be provided uniformly over the area. Hydrographic surveys have resulted in reasonably complete charts of all the main routes followed by summer supply ships, and observations made from the smooth surface of the frozen sea bave provided submarine topography where even ships cannot penetrate. In such ways, the search for knowledge has reached out into the deeper waters of the Arctic basin.

Study of the remoter parts of Northern Canada is now more comprehensive and there has also been a change in emphasis. Until comparatively recently the need was to know elementary facts about the land and the surrounding seas-in essence, their whereabouts and general character. This first approximation to geographical knowledge was finally completed in the 1950s, to be followed by more detailed surveying and mapping on larger scales. This essential task still continues but it has given way in priority to the carefully planned and all-inclusive scientific survey, similar in scope if not in degree to the established government surveys of Southern Canada.

The monumental Atlas of Canada published in 1958 demonstrates more clearly than can words the phenomenal increase in geographical knowledge of the country since the midnineteenth century. Its 110 selected sheets cover topics ranging from the routes of the early explorers to the nation's external relations, and reveals not only the state of accumulated knowledge but also the increasingly sophisticated means used in gathering it. Although some of the information used was, of course, assembled during the nineteenth century, a comparison between the Atlas and its predecessor published in 1906 reveals how much has been contributed during the present century. Also apparent is the change in the character of geographical knowledge-using the term in the sense of systematic information which may be displayed areally. To the earlier requirement for topographic maps has been added the need for detailed information on geology, vegetation, climate, soils and a wide range of geophysical phenomena. Also, apart from such physical data, there is arising a great demand for information on the whole range of human, including economic, relationships. Details of population distribution can be mapped with great accuracy (even the whereabouts of the Eskimos is known) as can the location of industries, transportation systems, educational and welfare facilities and a wide range of other essentials to everyday life, from garages to television stations. It has become possible to display the manner in which the land surface of the country is being utilized, whether for forests, pastures, cities, reservoirs, parks and so on and, up to a point, where its improper use has been harmful. Pockets of poverty, rural and urban, can be plotted, as can existing and potential natural wealth.

In other words, the compendium of geographical knowledge about Canada has reached a stage where it is becoming possible to consider the country as "known" in the sense that the older parts of Europe have long been known. This has been brought about by deliberate policy, acting through a complex system of government departments, federal and provincial, charged with gathering information of all kinds and supplemented by important contributions from university scientists.

Almost a thousand years after the first tentative touchdown by Vikings along the eastern seaboard and a century after Confederation, national stocktaking is approaching completion. New knowledge will, of course, continue to pour in at an ever-increasing pace but it will be fitted into a geographical framework which is no longer likely to change dramatically.*

[^2]

Growth of geographical knowledge in the past quarter-century is indicated by the detail appearing in these maps of the same portion of the Canadian Shield in northern Ontario; the one above was drawn in 1940 and the one below in 1966.



## Section 1.--Physical Geography*

Canada occupies the northern half of the North American Continent with the exception of Alaska and Greenland, extending in longitude from Cape Spear, Newfoundland, at $52^{\circ} 37^{\prime}$ W, to Mount St. Elias, Yukon Territory, at $141^{\circ}$ W, a distance of $88^{\circ} 23^{\prime}$ or 3,223 miles. In latitude it stretches from Middle Island in Lake Erie, at $41^{\circ} 41^{\prime} \mathrm{N}$, to the North Pole. The northernmost point of land is Cape Columbia on Ellesmere Island, at $83^{\circ} 07^{\prime} \mathrm{N}$, and the straight-line distance from Middle Island to Cape Columbia is 2,875 miles.

In shape, Canada resembles a distorted parallelogram with its four corners making important salients. In the north the salient formed by the Arctic Archipelago, which penetrates deep into the Arctic basin, guards the northern approaches to the Continent from Europe and Asia and makes Canada neighbour to the Union of Soviet Socialist Republics. In the south the salient of peninsular Ontario thrusts far into the heart of the United States. In the east the salient of Labrador and the Island of Newfoundland commands the shortest crossings of the North Atlantic Ocean and links Canada geographically with Britain and France. In the west the broad are of land between Vancouver in southern British Columbia and Whitehorse in Yukon Territory provides the shortest crossings of the North Pacifc Ocean between continental North America and the Far East. Canada thus lies at the crossroads of contact with the principal powers and some of the most populous areas of the world.

## 1.-Approrimate Land and Freshwater Areas, by Province or Territory

Nork.-A classification of land areas as agricultural, forested, etc., is given in Chapter $X$ on Land Use and Renewable Reacarce Development.

| Province or Territory | Land | Freshwater | Total | Percentage of Total Ares |
| :---: | :---: | :---: | :---: | :---: |
|  | sq. miles | aq. miles | eq. miles |  |
| Newfoundland, ....... | 143,045 | 13,140 | 156,185 | 4.1 |
| Island of Newfoundland. | 41.164 | 2,195 | 48, 359 | 1.1 |
| Lebrador.......... | 101, 881 | 10.945 | 112, 888 | 8.0 |
| Prince Edward Island | 2,184 20.402 | -1,023 | 2, 184 | 0.1 0.8 |
| Newa Branswick | 27,835 | 1.519 | 28,354 | 0.7 |
| Quebec. | 523,860 | 71,000 | 594,860 | 15.4 |
| Ontario.. | 344, 092 | 68,490 | 412,582 | 10.7 |
| Manitobs. | 211,775 | 38,225 | 251,000 | 6.5 |
| Saskatchewan | 220,182 | 31,618 | 251,709 | 6.6 |
| Alberta. | 248,800 | 6.485 | 255.285 | 8.6 |
| British Columbia. | 359,279 | 6,976 | 366,255 | 9.5 |
| Yukon Tertitory. | 205,346 | 1,730 | 207,076 | 5.4 |
| Northwest Torritories. | 1,253,438 | 51,465 | 1,304,903 | 33.8 |
| Franklin...... Keawtib.... | 541,755 218,460 | 7,600 9,700 | 549, 255 2.88 20, 660 | 14.8 6.8 |
| Mackenzie | 408, 285 | 34,265 | 587, 490 | 18.7 |
| Canada. | 3,560,238 | 221,571 | 3,851,809 | 180.4 |

In size, Canada is the largest country in the Western Hemisphere and the second largest country in the world. Its area of $3,851,809$ sq. miles may be compared with that of the Union of Soviet Socialist Republics, 8,649,539 sq. miles, $\dagger$ China (including Taiwan and Pescadores), $3,705,408$ sq. miles, $\dagger$ the United States of America (including Alaska and Hawaii), $3,615,2 \mathrm{l}$ l sq. miles, $\dagger$ and Brazil, $3,286,488 \mathrm{sq}$. miles. $\dagger$ It is more than forty times the size of Britain and eighteen times that of France. The immense size of the country, while encompassing many resources and seeming to afford much acope for settle-

[^3]ment, imposes its own burdens and limitations, particularly because much of the land is mountainous and rocky or is under an arctic climate. The developed portion is probably not more than one third of the total; the occupied farm land is less than 8 p.c. and the currently accessible productive forest land 19 p.c. of the total. The population of Canada, estimated at $19,919,000$ as at June 1, 1966, may be compared witb 192,119,000* for the United States (including Alaska and Hawaii) (1964) and with 78,809,000* for Brazil (1964).

The mileages in Table 2 are another indication of the size of Canada. They show the length of communication facilities required between the larger cities, between outlying industrial communities built up around large mining or smelting projects and the nearest cities, and between northern outposts and the supplying cities. In this table, mileage given is for the major means of transport used between the points concerned; air mileages are given for most transcontinental distances.

The length of Canada's southern border adjoining the United States is $3,986.8$ miles and the length of the Yukon-British Columbia border adjoining Alaska is $1,539.8$ miles.

## 2.-Travel Distances between Certain Cities and Other Points of Interest in Canada

Nore.-The dash used in this table indicates that the distance concerned is of no particular interest. In each case the mileage given is for the type of travel most generally used-road (H), rail (R), air (A) or water ( $\mathbf{w}$ ); air mileages are given for most transcontinental distances. Water routes are given in nautical miles.

| From | Halifax | Montreal | Quebec | Ottawa | Toronto | Winnipeg | $\begin{aligned} & \text { Edmon- } \\ & \text { ton } \end{aligned}$ | Vancouver |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | miles | es | miles | miles | es | miles | miles | miles |
| St. John's, Nfld | w 531 | w 1,043 | w 904 | - | w 1,336 | - | - | A 3,955 |
| Charlottetown, P | H 151 |  |  | - | H $\overline{1,164}$ |  |  | 3,232 |
| Frederioton, N.B. | H 298 | H $\quad 526$ | H | - | H 1,181 | - | - | 3,232 |
| Saint John, N.B. | H 276 | H 593 | H 426 | H 719 | H 933 | - | - | - |
| Chibougamau, Q |  |  | RR |  | 3 |  |  |  |
| Montreal, Que | R 840 | H 167 | H ${ }^{167}$ | $\begin{array}{ll} \text { H } & 126 \\ \text { H } & 293 \end{array}$ | $\begin{array}{ll}\mathrm{H} & 340 \\ \mathrm{H} & 507\end{array}$ | A A 1,436 | A 2,225 | $\begin{array}{ll}\mathrm{A} & 2,668 \\ \mathrm{~A} & 2,814\end{array}$ |
| Quebec, Que. |  | $\begin{array}{ll} \mathbf{H} & 167 \\ \mathbf{R} & 357 \end{array}$ | $\text { R } 357$ | H 293 | H 507 | A 1,436 |  | $2,814$ |
| Schefferville, Q | - | $+$ | $+$ | - | - | - | - | - |
| Sept Îles, Que. | - | w 430 | w 291 | - | - | - |  | - |
| Fort William, | - | w 1,055 | w 1,194 | R 878 | w 762 | R 419 | R $\mathbf{1 , 2 1 9}$ | R 1,892 |
| Hamilton, Ont | - | H 382 | H 549 | H 290 | H 42 |  |  |  |
| Ottawa, Ont. | - | H 126 | H 293 |  | H 248 | A 1,325 | A 2,131 | A 2,574 |
| Sudbury, Ont. |  |  |  | H $\quad 311$ |  | R 945 |  |  |
| Toronto, Ont. | w 1,1881 | H 340 | H 507 | H 248 | - | A $\quad 957$ <br> $\mathbf{R} \quad 992$ | A 1,748 | A 2,360 |
| Lynn Lake, Ma | - | - | - | - | - | R R | - |  |
| Winnipeg, Man | - | - | - | - | A 957 | - | R 800 | R 1,473 |
| Regina, Sask. | - | R 1,764 | - | R 1,653 | R 1,587 | R $\quad 356$ | R $\quad 512$ | R 1,117 |
| Saskatoon, Sask | - |  | - |  |  | R $\quad 470$ | R $\quad 330$ | R 1,095 |
| Uranium City, | - | - | - | - |  | - | A 456 | A 992 |
| Calgary, Alta. | - |  | - | - | R 2,063 | R 832 | R 194 | R 641 |
| Edmonton, Alta | - | R 2,159 | - | R 2,041 | R 2,007 | R 800 | - | R 765 |
| Fort St. John, | - |  |  |  |  | - | A 371 | $\stackrel{\mathbf{R}}{ } \quad 728$ |
| Kitimat, B.C. | - | - | - | - | - | - |  | w ${ }_{\text {w }}{ }^{\text {w }}$ |
| Prince Rupert, B |  |  |  |  |  |  |  |  |
| Vancouver, B. | A 3,232 | A 2,668 | R 3,042 | R 2,770 | A 2,360 | A 1,403 | R _ 765 | w 81 |
| Victoria, B.C | 3,279 | 二 | - | - | - | A 1,058 | A 316 | 615 |
| Whitehorse, Y | - |  | - | - | - | - | H 1,283 | 1,056 |
| Frobisher, N.W | - | A 1,297 | - | - | - |  | A 3,522 | 3,965 |
| Inuvik, N.W.T. | - | A 3,543 |  |  |  | $\text { A } 2,140$ | A 1,318 | 1,854 |
| Yellowknife, N.W. | - |  | - | - | - | $\text { A } 1,398$ | A 656 | A 1,192 |

[^4]Politically, Canada is divided into ten provinces and two territories. Each province is sovereign in its own sphere and administers its own natural resources, and upon such

- United Nations Population and Vital Statistics Report, Jan. 1, 1966.
resources, as related to topography, position and climate, is based the economy of the province. The resources of the Yukon and Northwest Territories, because of the remoteness, the great extent and the meagre and scattered populations of these areas, are administered by the Federal Government.

The main physical and economic characteristics of each province and territory are described in some detail in the 1963-64 Year Book; this article is available in reprint form. Also, it should be mentioned that the economic development of the country as a whole, based in the first instance on physical features and later on other factors, has formed regions quite distinct from the political divisions. These economic regions are described in an article appearing in the 1962 Year Book at pp. 17-23.

All geographical data on Canada that might be of use in promoting the country's economic, commercial and social welfare are available from the Geographical Branch of the Department of Energy, Mines and Resources. The work of this Branch includes the compiling of geographical material of national significance and the conducting of geographical surveys in the field. Land surface conditions, land use, types of vegetation and the structure of towns and cities are typical subjects of investigation. The Canadian Permanent Committee on Geographical Names, administered by the Branch, deals with all questions of geographical nomenclature affecting Canada and undertakes research and investigation into the origin and usage of geographical names. The Committee is composed of representatives of the federal mapping agencies and other federal agencies concerned with nomenclature and a representative appointed by each province.

## Subsection 1.-InIand Waters

The inland waters of Canada (not including saltwater areas that are a part of Canada) are extensive, constituting about 7.6 p.c. of the total area of the country. Aside from their basic essentiality to the support of life, Canada's fast-flowing rivers and chains of lakes have had a great bearing on the development of the country and on its economic and social wellbeing. In the early days of exploration and settlement, they were the avenues of transportation and often the source of subsistence. These functions have now diminished in importance; with the exception of the St. Lawrence and certain water routes in the interior and the Far North, the rivers and lakes have assumed other roles in the domestic, industrial, agricultural and recreational life of the people. They still serve as efficient carriers of pulpwood from the forests to the mills and their waters are harnessed to provide power for industry or are dammed and diverted to irrigate and bring life to otherwise waste land.

The inland waters of Canada are best studied by segregating the main drainage basins. The Atlantic drainage basin is the most important, being dominated by the Great Lakes-St. Lawrence system which drains an area of approximately 678,000 sq. miles and forms an unequalled navigable inland waterway through a region rich in natural and industrial resources. From Duluth, Minn., at the head of Lake Superior to Belle Isle at the entrance to the Gulf of St. Lawrence the distance is 2,280 miles. The entire drainage area to the north of the St. Lawrence and the Great Lakes is occupied by the southern fringe of the Canadian Shield-a rugged, rocky, plateau region over the edge of which tumble many swift-flowing tributary rivers. These rivers, as well as the St. Lawrence itself, provide the electric power necessary to operate the great industries of the area. South of the St. Lawrence, the smaller rivers are important locally. The St. John, for instance, drains a fertile area and provides most of New Brunswick's hydro power.

The Hudson Bay drainage basin, although the largest in area, is the least important economically. Only the Nelson and Churchill Rivers have power potential within econom-
ical distance of settled areas. The two main branches of the Saskatchewan River, tributary to the Nelson, drain one of Canada's great agricultural regions and are now the bases of important irrigation projects.

The Arctic drainage basin is dominated by the Mackenzie, one of the world's longest rivers, which flows 2,635 miles from the head of the Finlay River to the Arctic Ocean and drains an area in the three westernmost provinces of approximately 700,000 sq. miles. Except for a 16-mile portage in Alberta, barge navigation is possible from the end of steel at Waterways on the Athabasca River to the mouth of the Mackenzie, a distance of 1,700 miles.


The rivers of the Pacific basin rise in the mountains of the Cordilleran Region and flow to the Pacific Ocean over tortuous, precipitous courses, rushing through steep canyons and tumbling over innumerable falls and rapids. They provide power for large hydro developments and in season swarm with salmon returning inland to their spawning grounds. The major rivers of the basin are the Fraser which rises in the Rocky Mountains and toward its mouth flows through a rich agricultural area, the Columbia which is an international river with a total fall of 2,650 feet during its course and has thus a tremendous power potential, and the Yukon River which is also an international river but, though the largest on the Pacific slope, is at present relatively unimportant economically.

Table 3 lists the principal rivers of Canada and their tributaries. The tributaries and sub-tributaries are indicated by indention of names; thus the Ottawa and other rivers are shown as tributary to the St. Lawrence, and the Gatineau and other rivers as tributary to the Ottawa.

## 3.-Lensths of Prineipal Rivers and Their Tributaries

| Drainage Basin and River | Lengtb | Drainage Bagin and River | Lensth |
| :---: | :---: | :---: | :---: |
|  | miles |  | miles |
| Fiowlus finto the Atlantic Ocean |  | Flowing into Hudson Bay-concluded |  |
| St. Lawrence (to head of St. Lonis, Minn.) | 1.900 | Eastmain...... | 510 |
| Ottawa. | 696 | Fort George (to Nichicum Lake). | 480 |
| Gatimean. <br> dan Lièvre | 205 | Attawapiskat. | 465 455 |
| Coulonge. | 135 | Nottaway (to head of Waswanipi) | 400 |
| Madawaek | 130 | Waswanipi... | 190 |
| Rouse. | 115 | Nelson (to head of Lake Wimnipeg) | 400 |
| Miafissippi | 105 | Rupert...... | 380 <br> 355 |
| Petawsws.... | ${ }_{90}^{95}$ | Red (to head of Lake Traverse | 345 |
| Dumoine..... | 80 | Moobe (to bead of Mattagami) | 340 |
| North. | 70 | Abitibi.............. | 340 |
| North Nation. | 60 | Mattagami. | 275 |
| Saguenay (to head of Peribonca) | 475 | Missinabi. | 265 |
| Peribouca. | 280 | Hayes. | 300 295 |
| Ashuspmuchuan | 165 | Whale. | 270 |
| Saint-Maurice.. | 325 | Harricanaw | 250 |
| Mattawin.......................... | 100 | Great Whale | 230 |
| Manicoulagan (to head of Racize de Boul | 310 | Leai. | 165 |
| Bersimis. | 240 |  |  |
| Richelieu. | 210 | Frowing into the Pacific Oeean |  |
| St. Francis. | 165 | Yukon (mouth to outlet of Tagish Lake). | 1,587 |
| Chaudiàre. | 120 | Yukon (Int. Boundary to bead of Nisutio). | 1,714 |
| French (to head of Sturgeon). | 180 | Porcapine | 448 |
| Stursean............... | 110 | Stewart | 331 |
| Grand... | 165 | Teolin. | 215 |
| Thsmes Spanish | 163 | White....... | 161 |
| Trentish. | 150 | Columbia (total)... | 1,150 |
| Missimagi | 140 | Columbia (in Canada) | 459 |
| Nipison (to head of Ombabika) | 130 | Kootensy (totai)......) | 407 |
| Moira. | 60 | Fraser. . . . . . . . . . . . | 850 |
| St. John....... | 40 | Thompson (to head of North Thompson) | 304 |
| St. John. | 418 | North Thompson.................... | 210 |
| Romaine... | 270 | South Thompson (to head of Sthuswap). | 208 |
| Moisie. .i. | 210 | Nechako....... | 287 |
| Cburehill. | 208 | Stuart (to head of Driftwood) | 258 |
| Exploita. | 153 | Chilcotin .1.7......... | 146 |
| Naskaupi. | 152 | Skeena | 1410 |
| Canairiktok | 138 | Bulkley (to head of Maxam Creek) | 160 |
| Eagle. | 138 | Stikine............... . . . . . . . . . . | 335 |
| Miramichi. | 135 | Alsek... | 260 |
| Marguerite <br> Gander | 130 | Nsas. | 236 |
| Flowing Inte Hudson Bay |  | Flowing Into the Arctic Ocean |  |
|  |  | Mackenzie (to head of Finlay).. | 2,635 |
| Saskstchewn (to head of Bow) | 1,600 | Peace to bead of Finiay). | 1.195 |
| South Saplatchewan... | 1,865 | Smay | 245 |
| Red Deer. | 385 | Little Smok | 185 |
| Bow. | 315 | Parsnip. | 145 |
| Belly | 180 | Athabasca. | 765 |
| North Sarkatche | 760 | Pembina. | 210 |
| Hed (to head of Sheyenne) | 545 | Liard. | 755 |
| Aspiniboine. | 590 | South Nahanni | 350 |
| Souris | 450 | Petitot. | 295 |
| W Qu'Appelle.............. | 270 | Fort Nelson. | 260 |
| Wionipeg (to head of Firesteel) | 475 | Hzy. | 530 |
|  | 330 | Peel (to bead of Ogilvie) | 425 |
| Churchill. | 1,000 | Aretic Red. | 310 |
| Koksoat (to bead of Caniapisear) | 660 | Twitya | 258 200 |
| Caniapiscbu.................. | 575 | Back..... | 605 |
| Severn (to head of Black Birch) | 610 | Coppermine | 525 |
| Albany (to beed of Cat).... | 610 | Anderson.. | 430 |
| Dubawnt.............. | 580 | Horton... | 275 |

The outstanding lakes of Canada are the Great Lakes, although only parts of these are in Canadian territory. The International Boundary between Canada and the United States passes through Lakes Superior, Huron, St. Clair, Erie and Ontario. Details are given in Table 4.

There are no tides in the Great Lakes although there is considerable variation in water levels caused by strong winds.
4.-Elevations, Areas and Depths of the Great Lakes

| Lake | Elevation Above Ser Level | Length | Breadth | $\underset{\text { Depth }}{\substack{\text { Marimum }}}$ | Total Area | Area on Canadian Side of Boundary |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | ft. | miles | miles | ft. | aq. miles | 8q. miles |
| Superior. | 602.23 | 383 | 160 | 1,301 | 32,483 | 11,524 |
| Michigan (U.S.A.) | 580.77 | 321 | 118 | 923 | 22, 400 |  |
| Huron... | 580.77 | 247 | 101 | 748 | 23, 860 | 15,353 |
| Erie.... | 575.30 572.40 | 246 | 24 37 | 21 | 432 9.889 | - 270 |
| Ontario. | 245.88 | 193 | 53 | 775 | 7,313 | 3,849 |

Other large lakes of Canada, ranging in area from 9,500 to 12,300 sq. miles, are Lake Winnipeg, Great Slave Lake and Great Bear Lake. Apart from these, notable for size, are innumerable lakes scattered over that major portion of Canada lying within the Canadian Shield. In an area of $6,094 \mathrm{sq}$. miles, accurately mapped, south and east of Lake Winnipeg, there are 3,000 lakes. In an area of $5,294 \mathrm{sq}$. miles, accurately mapped, southwest of Reindeer Lake in Saskatchewan, there are 7,500 lakes.

## 5.-Elevations and Areas of Princlpal Lakes, by Province

Nork.-Areas given are tor mean water levels. For those reservoirs and lakes for which two elevations are given, HW means high water and LW low water. All elevations are in feet above mean sea level. "Total" refers to the area of the whole lake; "part" refers to the area within the designated province or territory.

| Province and Lake | Elevation | Area | Province and Lake | Elevation | Ares |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | ft. | sq. miles |  | ft. | sq. miles |
| Newfeundland- |  |  | Qurebet-concluded |  |  |
|  | 12 | 24 | Deux Montagres (des). | 73 | 63 |
| Gander | ${ }^{86}$ | 49 | Eau Claire (al') ....... | 790 | 535 |
| Grand | 275 | 205 | Evans,................ | 760 | 180 |
| Melville. | sea level | 1,133 | Goéland. | 810 | 125 |
| Michikamau | 1,521 | 566 | Indian House. | $\begin{array}{r}890 \\ \hline\end{array}$ | 125 |
| Red Indian. | 500 | 70 | Kempt........ | 1,372 | 75 |
| Victoria. | 700 | 15 | Kipawa...j | 884 860 8 | 125 130 |
|  |  |  | Manicouagan. | 645 | 110 |
| Nova Scotia - |  |  | Mancuane. | 1,349 | 100 |
| Bras d'Or | tidal | 360 | Matagami | 765 | 88 |
|  |  |  | Minto. | 450 | 485 |
|  |  |  | Mistassini | 1,220 | 840 |
| New Brunswick- Grand.......... |  |  | Nicbicun. | $\begin{array}{r}1,737 \\ \hline 785\end{array}$ | 150 50 |
|  | tidal | 65 | Olga. | 785 430 | 250 |
|  |  |  | Pipmuacan (reservoir) | HW 1,305 | 90 |
| Ouebec- <br> Abitibi (total, 369) part. |  |  | Plétipi............... | LW 1,275 |  |
| Abitibi (total, 369) part. <br> Albanel. | 868 1,289 | 172 | Pletipi | HW $\begin{array}{r}1.660 \\ 867\end{array}$ | 138 |
| Baskatong (reservoir) | HW ${ }^{1,282}$ | 109 | Quinze, des | LW 857 | ) 55 |
| Bienville | ${ }^{\text {Wr }} 1,400$ | 392 | Saint-Francois, River Lawrence (total, 88) par | 160 | 83 |
| Burnt (Brolle) | 1,590 | 56 | Saint-Jean................. | 321 | 414 |
| Cabonga (reservoir) | HW 1,185 | 66 | Saint-Louis.. | ${ }^{69}$ | 57 |
| Caniapiscau....... | LW $\begin{array}{r}1,169 \\ 1,850\end{array}$ | 210 | Saint-Pierre Simard. | 869 | 13 |
| Champlain (total, 360 ) |  | 18 |  | HW 588 | 68 |
| Chibougamau. | 1,253 | 88 | Waswenipi . | LW $\begin{array}{ll}575 \\ 830\end{array}$ | 75 |

## 5.-Elevations and Areas of Principal Lakes, by Province-continued

| Province and Lake | Elevation | Area | Province and Lake | Elevation | Ares |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | ft. | sq. miles |  | ft . | sq. miles |
| Ontario |  |  | Manitoba-concluded |  |  |
| Abitibi (total, 369) part. . . . . . . | 868 | 313 | Walker. | 679 | 62 |
| Big Trout Lake.................. | 770 | 264 | Waterh | 829 | 90 |
|  | 1,378 | 61 | Wekusko | 844 | 64 |
| Eagle | 1,192 | 140 | Winnipeg | 713 | 9,465 |
| Erie (total, 9,889) part........... | 572 | 4,912 | Winnipegosis.................... | 833 | 2,103 |
| Huron, including Georgian Bay (total, 23,860) part. | 580 186 | 15,353 | Woods, Lake of the (total, 1,695 ) part (reservoir). | 1,060 | 69 |
| Lac la Croix (total, 55) part.................................. | 1,186 1,025 | 25 75 |  |  |  |
| Lower Manito | 1,215 | 60 | Saskatchewan - |  |  |
| Mille Lacs, Lac | 1,496 | 103 | Amisk | 964 | 168 |
| Minnitaki. | 1,177 | 72 | Athabasca (total, 3,120) part.... | 699 | 2,180 |
| Nipigon. | 855 | 1,870 | Besnard. | 1,278 | 72 |
| Nipissing ...................... | 640 | 350 | Black Birch | 1,517 | 54 |
| Ontario (total, 7,313) part....... | - 245 | 3,849 | Candle. | 1,621 | 56 |
| Rainy (total, 360) part (reser-\{ voir). | $\begin{array}{ll} \text { HW } & 1,108 \\ \text { LW } & 1,103 \end{array}$ | 291 | Canoe. Churchill | 1,415 1,382 | 78 213 |
| Red............................ | 1, 1,157 | 71 | Cold (total, 138) | 1,756 | 46 |
| St. Clair (total, 432) part........ | 575 | 270 | Cree. | 1,570 | 446 |
| St. Francis, River St. Lawrence |  |  | Cumberland. | 871 | 98 |
| (total, 88) part............... | 154 | 25 | Deschambault | 1,072 | 209 |
| St. Joseph........................ | 1,226 | 187 | Doré. | 1,506 | 248 |
| Sandy. | 906 | 270 | Ile à la Crosse | 1,380 | 166 |
| Seul (reservoir) | 1,170 | 539 | Kamuchawie (total, 57) part.... | 1,157 | 26 |
| Simcoe......................... | 718 | 283 | Kipahigan (total, 60) part....... | 966 | 31 |
| Stout (Berens River)............ | 1,039 | 50 | Lac la Loche.................... | 1,460 | 76 |
| Stargeon (English River)........ | 1,342 | 110 | Lac la Plonge. | 1,476 | 90 |
| Superior (total, 32,483) part...... Timagami | 602 965 | 11,524 | Lasta Ronge. | 1,198 | 552 |
|  | HW 589 | 55 | Montreal | 1,606 1,608 | 89 162 |
| Tim | LW 575 | 55 | Namew (total, 80 ) part | 1,872 | 72 |
| Trout (English River) | 1,294 | 156 | Nemeiben............. | 1,259 | 63 |
| Woods, Lake of the (total, 1,695 ) |  |  | Peter Pond | 1,382 | 302 |
| part (reservoir)............. | 1,060 | 953 | Pinehouse | 1,262 | 159 |
|  |  |  | Primrose (total, 188) part | 1,964 | 180 |
| Manitoba |  |  | Quill. | 1,703 | 236 |
| Athapapusko |  | 104 | Reindeer (tota | 1,150 | ,096 |
| Beaverhill.. | ${ }_{651}^{95}$ | 70 | Saskatchewan, $10 \ldots$ | 1,827 | 171 32 |
| Cedar. | 830 | 517 | Smoothstone...... | 1,573 | 110 |
| Clearwater (Atikameg)........... | 855 | 112 | Tazin. | 1,130 | 156 |
| Cormorant. | 840 | 174 | Wollaston | 1,300 | 796 |
| Cross (Nelson River) ............. | 679 | 274 |  |  |  |
| Dauphin......................... | 853 | 200 |  |  |  |
|  | 811 | 64 | Alberta- |  |  |
| Goose | 585 922 | 319 | Athabasca (total, 3,120) part.... | 699 | 940 |
| Granville | 850 | 181 | Buffalo.. | 2,202 2,566 | 80 |
| Island. | 744 | 550 | Calling. | 1,949 | 55 |
| Kamuchawie (total, 57) part | 1,157 | 31 | Claire. | , 699 | 545 |
| Kipahigan (total, 60) part. | 968 | 29 | Cold (total, 138) | 1,756 | 92 |
| Kiskitto. | 696 | 65 | Lac la Biche. | 1,784 | 94 |
| Kiskittogis | 709 | 99 | Lesser Slav | 1,892 | 461 |
| Kississing | 920 | 138 | Mamawi. | 695 |  |
| Manitoba | 814 | 1,817 | Peerless. | 2,269 | 75 |
| Moose. | 838 | 525 | Primrose (total, 188) part | 1,964 | 8 |
| Namew (total, 80) part <br> Northern Indian. | 873 760 | 150 | Sullivan (variable).. | 2,651 | 62 |
| Nueltin (total, 850) part........... | 760 875 | 150 | Utikuma. | 2,115 | 85 |
| Oxford... | 612 | 155 |  |  |  |
| Paint. | 615 | 54 | British Columbia- |  |  |
| Pelican (west of Lake Winnipeg- |  |  | Adams.... | 1,334 | 52 |
| Playis)......................... | 838 | 80 | Atlin (total, 299) part | 2,192 | 298 |
| Playgreen...................... | 711 | 257 | Babine.. | 2,332 | 194 |
| Red Deer (west of Lake Winnipegosis). | 875 | 100 | Chilko. | 3,842 | 75 |
| Reed....................... | 915 | 78 | Francois. | 2,345 | 91 |
| Reindeer (total, 2,467 ) part | 1,150 | 371 | Harrison | 30 | 87 |
| St. Martin | 801 | 125 | Kootenay | 1,745 | 168 |
| Setting.......................... | 737 | 49 | Kotcho | 1,970 | 31 |
| Sipiwesk | 601 | 201 | Lower Arro | 1,370 | 59 |
| Sisipuk (total, 103) par | 919 | 71 | Okanaga | 1,123 | 136 |
| Southern Indian. | 885 | 1,060 | Ootsa. | 2,666 | 50 |
| Talbot. | 8885 | 118 | Quesnel. | 2,380 1,142 | 100 120 |

## 5.-Elevations and Areas of Principal Lakes, by Province-concluded

| Province and Lake | Elevation | Area | Province and Lake | Elevation | Area |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | ft . | sq. miles |  | ft. | sq. miles |
| British Columbla-concluded |  |  | Northwest Territories-concluded |  |  |
|  | 2,230 | 139 |  | 1,226 | 253 |
| Tagish (total, 130) part | 2,152 | 78 | Dubawnt. | 764 | 1,600 |
| Takla. | 2,260 | 102 | Faber | 753 | 163 |
| Teslin (total, 142) part | 2,250 | 58 | Franklin......................... | 49 | 175 |
| Upper Arrow........... | 1,401 | 88 | Gras, de........................ | 1,365 | 345 |
|  |  |  | Great Bear. | 390 | 12,275 |
|  |  |  | Great Slave | 512 | 10,980 |
| Yukon Territory- |  |  | Hardisty........................ | 643 | 107 |
| Aishihik............ | 3,001 | 107 | Hottah......................... | 640 | 377 |
| Atlin (total, 299) part | 2,192 | 1 | Kaminuriak | 320 | 360 |
| Kluane............ | 2,525 | 184 | La Martre. | 870 | 685 |
| Laberge. | 2,100 | 87 | Maguse. | 1,415 | 250 540 |
| Tagish (total, 130) part. | 2,152 | 52 | Marian. | 513 | ${ }_{90}$ |
| Teslin (total, 142) part..... | 2,239 | 84 | Nueltin (total, 850 ) part.......... | 875 | 580 |
| Telin (total, 12) part. |  |  | Nutarawit. ...................... |  | 350 |
|  |  |  | Pelly... | 501 | 331 |
| Northwest Territories- |  |  | Point. | 1,229 | 295 |
| Aberdeen. | 261 | 475 | Rae | 692 | 74 |
| Artillery | 1,190 | 153 | Schultz. | 250 | 110 |
| Aylmer | 1,230 | 340 | Thaolintoa | 496 | 160 |
| Baker. | 30 | 975 | Yathkyed...................... | 461 | 860 |

## Subsection 2.-Coastal Waters

The coastline of Canada, one of the longest of any country in the world, comprises the following estimated mileages:-

## Mainland-

Atlantic, 6,110; Pacific, 1,580; Hudson Strait, 1,245; Hudson Bay, 3,155; Arctic, 5,770; total, 17,860 miles.

## Islands-

Atlantic, 8,680; Pacific, 3,980; Hudson Strait, 60; Hudson Bay, 2,305; Arctic, 26,785; total, 41,810 miles.

A comprehensive description of the coastal waters of Canada would require information from sciences such as oceanography, marine biology and meteorology. However, the basic factor in any study of the oceanic-continental margin is the physical relief of the sea floor, and the scope of the information presented here is therefore restricted to this and a few salient features of the Atlantic, Arctic and Pacific marginal seas surrounding Canada.

Atlantic.-Along this coastal area, the sea has inundated valleys and lower parts of the Appalachian Mountains as well as those of the Canadian Shield. The submerged continental shelf, protruding seaward from the shore, effects the transition from continental to oceanic conditions. This shelf is distinguished by great width and diversity of relief. From the coast of Nova Scotia its width varies from 60 to 100 miles, from Newfoundland 120 to 50 miles (at the entrance of Hudson Strait), and northward it merges with that of the Arctic Ocean. The outer edge of the shelf, known as the continental shoulder, is of varying depths of from 100 to 200 fathoms before the shelf suddenly gives way to the steep declivity leading to abyssal depths. The over-all gradient of the Atlantic continental shelf is slight but the whole area is studded with shoals, plateaux, banks, ridges and islands and the coasts of Nova Scotia and Newfoundland are rugged and fringed with islets and shoals. Off Nova Scotia the 40 -fathom line lies at an average of 12 miles from the shore and constitutes the danger line for coastal shipping. The whole floor of the marginal sea appears to be traversed by channels and gullies cutting well into the shelf.

The main topographical features of the Atlantic marginal sea floor are attributed to glacial origin but land erosion is an important factor. Eroded materials are carried seaward by tivers, ice and wind, and wave action against cliffs and shore banks washee away enormous masses that are deposited over the surrounding sea floor. The topography of the continental sea floor is therefore constantly changing and navigation charte of Canada's eastern seaboard must be continuously revised.

Hudson Bay and Hudson Strait bite deeply into the Continent. Hudson Bay is an inland sea $250,000 \mathrm{sq}$. miles in area having an average depth of about 70 fathoms; the greatest charted depth in the centre of the Bay is 141 fathoms.

Hudson Strait separates Baffin Island from the continental coast and connects Hudson Bay with the Atlantic Ocean. It is 430 miles long and from 37 to 120 miles wide and its greatest charted depth of 481 fathoms is close inside the Atlantic entrance. Great irregularities of the sea floor are indicated but, except in inshore waters, few navigation hazards have been located.

Arctic.-The submerged plateau extending from the northern coast of North America is a major part of the great continental shelf surrounding the Arctic Ocean, on which lie all the Arctic islands of Canada, Greenland, and most of the Arctic islands of Europe and Asia. This shelf is most uniformly developed north of Siberia, where it is about 500 miles wide; north of North America it surrounds the western islands of the Archipelago and extends 50 to 300 miles seaward from the outermost islands.

The topography of the floor of the submerged part of this continental margin is only partly explored but sufficient has been charted to indicate, in common with continental shelves throughout the world, as abrupt break at the oceanward edge to the relatively steep declivity of the continental slope. This slope borders the western side of the Queen Elizabeth Islands and, from it, deep well-developed trougha enter between the groups of islands. Sills across Davis Strait, Barrow Strait and other channels, on which the depth is about 200 fathoms, interrupt the network of deep troughs and separate the Arctic basin from the Atlantic.

That part of the continental shelf bordering the Arctic Ocean in the vieinity of the Queen Elizabeth Islands (see p. 16) is the subject of extensive study. Since 1959 a party based at the jnint Canadian-United States weather station at Isachsen on Ellef Ringnes Island has been investigating the oceanography, hydrography, submarine geology, gravity, geomagnetic features and crustal seismic properties of the continental shelf area, carrying out physiographic, hydrological, permafrost and glaciological studies on the ielande of the region, mapping the nature, distribution and movement of the sea ice, and running basic topographic control surveys. This work is continuing, with a party in the field from March to September each year, and should eventually cover all of the unmapped parts of the shelf between Greenland and Alaska. The investigations should yield detailed and accurate information on the physical and chemical composition and dynamic characteristics of the Arctic oceanic waters; the bathymetry of the continental shelf and slope and the straits and sounds of the Archipelago; the topography and structure of the shelf and the nature of its sediments, its underlying rocks and possible mineral resources; the structure and physical characteristics of the northerd edge of the North American continental platform and its contact with the Arctic Ocean basin; the factors controlling the development of the Arctic landscape and the evolution of the islands; and the changes in sea level, glaciers, sea ice and climate in the recent geological past.

Pacific.-The marginal sea of the Pacific differs strikingly from the other marine zones of Canada. The hydrography of British Columbia is characterized by bold, abrupt relief-a repetition of the mountainous landscape. Numerous inlets penetrate the mountainous coast for distances of 50 to 75 miles. They are usually a mile or two in width and of considerable depth, with steep canyon-like sides. From the islet-strewn coast, the continental shelf extends from 50 to 100 sea miles to its oceanward limit where depths of about 200 fathoms are found. There the sea floor drops rapidly to the Pacific deeps, parts of the western slopes of Vancouver Island and the Queen Charlotte Islands Jying
only four miles and one mile, respectively, from the edge of the declivity. Thase great detached land masses are the dominant features of the Pacific marginal sea. As is to be expected in a region so irregular in hydrographic relief, shoals and pinnacle rocks are numerous, necessitating cautious navigation.

## Subsection 3.-Islands

The largest islands of Canada are in the North and all experience an arctic climate. The northern group extends from the islands in James Bay to Ellesmere Island which reaches $83^{\circ} 07^{\prime} \mathrm{N}$. Those in the District of Franklin lie north of the mainland of Canada and are generally referred to as the Canadian Arctic Archipelago; those in the extreme north-lying north of the M'Clure Strait-Viscount Melville Sound-Barrow StraitLancaster Sound water passage - are known as the Queen Elizabeth Islands.

On the West Coast, Vancouver Island and the Queen Charlotte Islands are the largest and the most important but the coastal waters are studded with many small rocky islands.

The Island of Newfoundland forming part of the Province of Newfoundland, the Province of Prince Edward Island, Cape Breton Island forming part of the Province of Nova Scotia, Grand Manan and Campobello Islands forming part of the Province of New Brunswick, and Anticosti Island and the Magdalen group included in the Province of Quebec are the largest islands off the East Coast.

Notable islands of the inland waters include Manitoulin Island ( 1,068 sq. miles in area) lying in Lake Huron, the so-called Thirty Thousand Islands of Georgian Bay and the Thousand Islands in the outlet from Lake Ontario into the St. Lawrence River.
6.-Areas of Princlpal Islands, by Region

| Region and Island | Area | Region and Island | Area |
| :---: | :---: | :---: | :---: |
|  | sq. miles |  | Eq. miles |
| Arctic Archipelago- |  | Arctic Arehipelago-concluded |  |
| Northern Region (Queen Elizabeth |  | Southern Region-concluded |  |
| Islands)- <br> Ellesmere | 82,119 | Stefansson. | 2,890 |
| Devon.... | 20, 861 | Aur Force. | 438 |
| Melville. | 16,369 | Rowley. | 436 |
| Axel Heiberg | 15,779 | Vangittart. | 386 |
| Bathurst. | 7,609 | Russell. | 349 |
| Prince Patricis | 6,081 | Jens Munk | 330 |
| Ellef Ringnes. | 5,139 | White. | 301 |
| Cornwallis. | 2,670 | Brsy. | 281 |
| Ammad Ringnes. | 2,515 | Foley. | 261 |
| Macketzie King | 1.922 | Kock. | 183 |
| Borden. | 1,344 | Matty | 173 |
| Cornwall | 1,292 | Royal Geographical Society |  |
| Eglinton. | 551 | (the larger of two). |  |
| King Chriatian. | 448 | Jenny Lind... ${ }^{\text {C........ }}$ | 170 170 |
| Lrock | 413 396 | Crown Princes Frederic | 170 167 |
| Cameron | 396 | Loks Land, | 164 |
| Byam Martin | 376 | Melbourne. | 149 |
| Meighen. | 293 | Tenuent. | 118 |
| Graham. | 283 | Gateshead | 86 |
| North Ke | 258 |  |  |
| Emerald. | 251 | Hudson Esy and Strait |  |
| Coburg.......ilis | 141 | Southampton.. |  |
| Little Cornwallis. Baillie Hamilton. | 139 | Coats... | 2,206 1,285 |
| Bailire Hamilton. | 114 |  | 1,137 |
| Southern Region- |  | Belcher (total for group). | 1,118 |
| Baffin........ | 183,810 | Nottingham. | ${ }_{5} 59$ |
| Victoria | 81,930 | Resolution.. | 387 |
| Banke, | 23.230 | Salisbury. | 312 |
| Prince of Wales | 12,830 |  | 310 |
| Somerset, | 9,370 | Akpatok (Ungava Bay) |  |
| King William. | 4,855 4,200 | Cbariton (James Bay). | 106 |
| Prince Charles. | 3,689 | Killinek... | 104 |

6.-Areas of Principal Islands, by Region-concluded

| Region and Island | Area | Region and Island | Area |
| :---: | :---: | :---: | :---: |
|  | sq. miles |  | sq. miles |
| Pacific Coast- |  | Paclfic Coast-concluded |  |
| Vancouver. | 12,408 | Gribbell. | 86 |
| Queen Charlotte. | 3,705 | Atlantic Coast- |  |
| Graham | 2,491 | A Newfoundland- |  |
| Louise... | 108 | Labrador Coast- |  |
| Lyell. | 69 | South Aulatsivik. | 167 |
| Kunghit. | 52 | Okak (total for two) | 113 |
| Princess Royal | 870 | Tunungayualok | 72 |
| Pitt. | 537 | North Aulatsivik........... .... | 53 |
| Banks. | 400 |  |  |
| King... | 324 199 | Island- |  |
| Porcher. | 199 | Newfoundland........ ......... ... | 43,359 |
| Nootka..... | 198 | Fogo Whorld . . . . . . . . . . . . . . . . . . | 95 |
| Gilford..... | 151 | New Worid. . . . . . . . . . . . . . . . . . . | 73 |
| Hawkesbury | 143 | Gulf of St. Lawrence- |  |
| Hunter. | 136 | Cape Breton............................ | 3,970 |
| Calvert. | 118 | Anticosti . . . . . . . . . . . . . . . . . . . . . . . | 3,043 |
| Texada. | 117 | Prince Edward. ............ | 2,184 |
| Swindle. | 109 | Magdalen (total for group)............. | 88 |
| Quadra. | 103 | Shippegan............................ | 59 |
| Gil..... | 94 | Bay of Fundy- |  |
| Roderick.......... | 88 | Grand Manan. | 55 |

## Subsection 4.-Mountains and Other Heights

The predominant geographical feature in Canada is the Great Cordilleran Mountain System which contains many peaks over 10,000 feet in height. The highest peak in Canada is Mount Logan in the St. Elias Mountains of Yukon Territory, which rises 19,850 feet above sea level. The highest elevations in all parts of the country are shown in Table 7 in feet above mean sea level.

## 7.-Principal Heights in each Province and Territory

Note.-Certain peaks, indicated by an asterisk (*), form part of the boundary between political divisions. Although their bases technically form part of both areas, they are listed only under one to avoid duplication. Elevations are given in feet above mean sea level.

| Province and Height | Elevation | Province and Height | Elevation |
| :---: | :---: | :---: | :---: |
| Newfoundland | ft. | Nova Scotia | ft. |
| Long Range Mountains- |  | (Spot height-Cape Breton) ............... | 1,747 |
| Lewis Hills. | 2,672 | Nuttby Mountain (Cobequid)............... | 1,204 |
| Gros Morne | 2,644 |  | 1,115 |
| Mrount Pate. ${ }^{\text {Grest }}$ | 2,251 | North Mountain (4 miles NE of West Bay Road) | 875 |
| Blue Mountain. | 2,128 | Sporting Mountain. | 675 |
| Table Mountain....... | 1,900-1,950 |  |  |
| Blue Hills of CouteauPeter Snout. | 1,600-1,650 | New Brunswick |  |
| Central Highlands- |  | Mount Carleton. | 2,690 |
| Main Topsail. | 1,822 | Moose Mountain........................... | 1,490 |
| Tornzat Mountains- | 1,761 |  |  |
| Cirque Mountain. | 5,160 | Quebec |  |
| Mount Cladonia. | 4,725 | Appalachian Mountains- |  |
| Mount Eliot.... | 4,550 | Mount Jacques-Cartier (Shickshocks).... | 4,160 |
| Mount Tetragona.. | 4,500 3,930 | Mount Richardson....................... | 3,887 |
| Blow Me Down Mountain | 3,880 | Mount Albert- |  |
| Kaumajet Mountains- |  | Albert Sud............................... | 3,775 |
| Bishops Mitre. | 4,060 | Mount Logan . . . . . . . . . . . . . . . . . . . . . . . | 3,700 |
| Finger Hill | 3,390 | Mégantic Mountain........................ | 3,550 |

## 7.-Princlpal Helghts in each Province and Territory-continued

| Province and Height | Elevation | Province or Territory and Height | Elevation |
| :---: | :---: | :---: | :---: |
| Quebec-concluded | ft. | Atberta-concluded | tt. |
| Appslachian Mountains-concluded |  | Rocky Mountains-concluded |  |
|  | 3,500 | Mount Fryatt. | 11,020 |
| Bayfield Mountain. | 3,470 | Mount Chown | 10,930 |
| Roundtop (Sutton Mountsina) | 3,175 | Mount Wilson | 10.700 |
| Hereford Mountain | 2,775 2,750 | Clearwster Mountain | 10,420 |
| Oriord Mountain | 2.750 | Eiffel Peak..... | 10,101 |
| Pinnacle Mountsin | 2,200 | Pinnacle Mountain. | 10.062 |
| Brome Mountain | 1.750 | Mount Rundle. | 9,838 |
| Shefford Mountain | 1,725 | The Three Sisters. | 9,744 |
| 8hield- Tremblant |  | Mount Eisenbower | 9,030 |
| Mount Tremblant. | 2,900 | Mount Edith. | 8.380 |
| Mount Ssinte-Anne. | 2,625 |  |  |
| Mount Sir Wilfrid. <br> Montererian Hills- | 2,569 | British Columbla |  |
| Saint-Hilaire Mountain. | 1,350 | Vancouver Island Ranges- |  |
| Yamaska Mountain. | 1.350 | Mount Albert Edward. | 6,8888 |
| Rougemont. | 1,200 | Mount Arrowsmith .... | 5.962 |
| Mount Eloyal. | 763 | Conat Mountaing- |  |
| Mount Saint-Grégoire. | 750 | Mount Waddington. | 13.260 |
| Ontario |  | *Mount Fairweather. |  |
| dar |  | *Mount Root. | 12,860 ${ }^{\text {a }}$ |
| Ogidaki Mountain.... | 2,183 | Columbis Mountains- |  |
| Bstchawana Mountain | 2.142 | Monashee Mountains- |  |
| Tip Top Mountsin..... | 2,009 | Mount Begbie Storm Hill | 8,956 5,300 |
| Niagara Esparpment- | 1,675 | Storm Hill S....... |  |
| Blue Mountains | 1,650 | Mount Dawson. | 11,023 |
| Caledon Mountain | 1,400 | Adamant Mountain | 10,980 |
| High Hill. | 1,163 | Grand Mountain. | 10.842 |
| Mount Nomo. | 1,000 | Iconoclast Mounta | 10,646 |
|  |  | Mount Rogers | 10,546 |
| Manftoba |  | Rocky MountainsMant Robsot | 12,972 |
| Porcupine Hills. | 2,790 | Mount Clemenceau | 12.001 |
| Puck Mountain. | 2,375 | Mount Goodsir. | 11.686 |
| Riding Mountain . . . . . . . . . . . . . , | 2,000 | Mount Bryce. | 11,507 |
|  |  | Resplendent Mountain Mount King George... | 11,240 11,220 |
| Saskatchewan |  | Consolstion Mountsin | 11,200 |
| Cypress Hills | 4,5671 | The Helmet... | 11,169 |
| Wood Mountajn, | 3,275 | Whiteborn Mountain | 11,130 |
| Vermilion Hilla. | 2,500 | Mount Huber. | 11,051 |
|  |  | Mount Freshfield | 10,945 |
| Alberta |  | Mount Mummery | 10.918 |
| Rocky Mountaing- |  | Mount Yaur | 10,891, |
| - Mount Columbia. | 12,2942 | ount Geilie | 10,843 |
| The Twins....... | 12,085 | Bush Mountain. | 10,770 |
| Mount Alberts | 11.874 | Mount Sir Alexander. | 10.740 |
| *Mount Assiniboine. | 11,870 ${ }^{\text {\% }}$ | Churchill Peak. | \$0,500 |
| Mount Forbes. | 11,852 | Mount Stephen. | 10,495 |
| Mount Temple. | 11,626 | Cathedral Mountain. | 10.484 |
| Mount Kitchener | 11,500 | Mount Gordon. |  |
| *Mount Lyell. | 11, $495 \%$ | The President. | 10,297 |
| *Mount Hungabee. | 11,4572 | Odaray Mountain. | 10,175 10.035 |
| -Mount Athabasea... | 11,452 11,400 | Mount Laussedat. Mount Burgess... | +10,035 |
| Mount Brazeau... | 11,388 | Moan Bures. |  |
| *Mount Victoria. | 11,365: | Yukon Territory |  |
| *Snow Dome. | $11,340^{2}$ |  |  |
| Stutfield Peak | 11,320 | St. Eliad Mountains- |  |
| *Mount Joffre. | 11,316: | Mount Logan..... | 19,850 |
| *Deltaform Mountain | 11.2352 | - Mount St. Elias... | ${ }^{18,0084} 17$ |
| *Mount Lefroy.... | $111.230^{2}$ | Lucania Mountain. | 17,130 |
| * Mount Sir Douglas. | 11,1742 | Mount Steele. | 16,644 |
| Mount Woolley. | 11,170 | Mount Wood. | 15,885 |
| ${ }^{*}$ Lunette Peak. | 11, 1502 | *Mount Vancouver. | 15,700 ${ }^{\text {d }}$ |
| Moant Hector | 11, 248 | *Mount Hubbsrd. | 15, 0134 |
| Diadem Peak... | 11,060 11,033 | Mount Wralsh..... | 14,5004 |

[^5]
## 7.-Princlpal Heights in each Province and Territory-concluded

| Territory and Height | Elevation | Territory and Height | Elovation |
| :---: | :---: | :---: | :---: |
| Yukon Territory-concluded | ft. | Northwest Terrttories-concluded | ft. |
| St. Elias Mountains-concluded |  | Arctio Islands-concluded |  |
| MeArthur Pesk. | 14.253 | Ellesmere-conctuded |  |
| Mount Augusta. | 14, 100 | Mount Townend.... | 7, 2006 |
| Mount Kenjedy | 13,905 13,818 | Mount Jeffers..... | 6,5006 |
| Mount Newton. | 13,811 | Mount Cheops | 5,200 ${ }^{\text {c }}$ |
| Mount Cook. | 13.780 | Devon- |  |
| Mount Craig... | 13,250 | Ice Cap. ........ | 0,190 |
| Badbsm Mountai | 12,625 12,150 | Mackenzie King- <br> Leffingwell Craga. |  |
| Mount Seattle. . | 10,082 | Banke- <br> Durham Heights. . | 2,218 |
| Northwest Territorles |  | Victoria- Shaler Mountains. |  |
| Arctic Ialands- |  | Mount Bumpus. | 1,700 |
| Bagfin- |  | Mainland- |  |
| Penny Fighland (Ice Cap) Mount Thule............. | 8,200-8,500 ${ }_{5}^{5,800}$ | Mount Sir Jamea MacBrion. | 9,062 |
| Cockscomb Mountain | 5.3005 | Cap Mountain...... | 3,175 |
| Barnea Ice Cap....... | 3,700 | Mount Clark.,. | 4.708 |
| Knife Edge Mountain. | 2,493 5 | Pointed Mountsin..... | 4.610 |
| Ellesmere- <br> United States Range |  | Nahanni Butte........... | 4,579 |
| Commonwealth Mountain.. | $7,5008$ | Mount Goodenough... | 8,219 |

[^6]
## Section 2.-Geology and Economic Minerals of Canada*

The bedrock foundation of Canada and its adjacent continental ehelves seem rigid and unchanging to human eyes, yet, in terms of geological time, these rocks and their contained mineral wealth represent only a momentary stage in the evolution of the Continent, an evolution which began more than $4,000,000,000$ years ago. Geological study of most of the present land surface of Canada has shown that at various periods and in various regions dark molten rocks rose from great depths, volcanoes erupted on the ancient land and sea floors, thick sequences of sediments accumulated, granites were either intruded as molten magma or derived from earlier rocks during intense folding and mountain building, erosion wore down or subdued the older mountain chains, shallow seas repeatedly encroached on and receded from the Continent of today, continental glaciers covered most of Canada and, as part of these geological processes, valuable minerals and fossil fuels became concentrated under exceptionally favourable conditions. These interrelated geological processes have produced the buried crust and the present face of Canada. They control the distribution of its economic mineral deposits, its physiography and, in large part, its present and potential land use.

To introduce some relatively simple concepts, let us go back in geological time and select a few examples in which erosion of land, deposition of the resulting detritue, and a series of favourable circumstances have concentrated valuable minerals for man's use. Geological processes are best understood when they can be observed in action at the earth's surface or in relatively shallow lakes or oceans. Modern Atlantic waves, pounding on exposed cliffs of the Maritime Provinces, greatly accelerate the rate of erosion. Fallen blocks are rounded and abraded on the cobble beaches, while waves and currents sweep the sand and rock flour along the coast to sandy beaches or spits, or carry them seaward to add to the slowly growing sedimentary beds of the continental shelf. This natural erosion and

[^7]milling action also releases valuable minerals from their enclosing rock. In almost all cases, these valuable minerals are dispersed or only slightly concentrated but, given a rare combination of favourable erosional and current conditions, and because of the relatively high density and physical and chemical stability of some valuable minerals, they may lag behind their lighter fellows of equal size and become concentrated as placer deposits of commercial value. Gold has been recovered in modest quantities from the beach sands of Cunard Cove, Nova Scotia, and is still being freed from the nearby cliffs. More commonly, placer deposits result from the erosion of inland areas and subsequent river transport. The famous gold placer deposits of the Yukon were formed in river channels more than $1,000,000$ years ago, at a time when mastodons and sabre-toothed tigers roamed the area. In Nova Scotia, at Gay's River, gold was similarly but less efficiently concentrated in coarse gravels about $350,000,000$ years ago, at a time when giant reptiles were the dominant form of life on earth. These gravels were subsequently covered by thousands of feet of sands and muds, washed from the newly formed Appalachian Mountains.

The probable history of the vast uranium deposits of Elliot Lake, Ontario, even though it began more than $1,600,000,000$ years ago, has been deciphered by geologists. Geological studies on the surface, underground and in the laboratory indicate that a granitic land mass of modest relief lay to the north of the present Elliot Lake district. Over an extended stable period, these rocks were deeply weathered and all but the most chemically inert minerals such as quartz were broken down to clay and disintegrated materials. At the beginning of Aphebian time, uplift or tilting of this weathered land occurred and mechanical, rather than chemical, erosion became dominant. Rivers swept the rotted upper layers of decomposed rock to the southeast. Quartz pebbles moved along and became rounded in the river channels and, because they were the largest remaining materials, formed blankets of gravel, and filled channels as the gradient and current of the rivers decreased. At the same localities, fine-grained sands and clays continued to be swept seaward. However, even small grains of abnormally heavy minerals such as uraninite, zircon and monazite, which had also resisted earlier chemical decomposition, could not be carried so readily by the waning currents and came to rest in the spaces between the rounded pebbles of quartz. Following this first flushing of the deeply weathered land mass, erosion and transport continued and many thousands of feet of Huronian sediments buried the uranium-rich quartz gravels. Subsequent lithification, folding, mineralogical changes, and further intervals of erosion during $1,500,000,000$ years produced folded, uraniferous quartz conglomerates which lie below and locally intersect the present earth surface. These exposed rocks were used to prepare the geological map of the district published by the Geological Survey of Canada in 1925. In 1952, after the uranium content of these conglomerates had been deduced by exploration geologists, this geological map proved invaluable because it outlined the sinuous distribution of the potential ore-bearing formations and accelerated the development of this large mining camp.

The above examples outline only one set of many dynamic geological processes. Geological maps and knowledge of such things as ancient geography, direction of flow of ancient rivers, and the character and degree of weathering of ancient land masses should be known if intelligent evaluation is to be made of the long-range mineral potential of the nation for undiscovered placer deposits of the above types. Apart from uranium, most mineral production comes from a wide variety of other types of deposit. Some, such as asbestos, are formed by alteration of particular rocks of high iron and magnesium content. In other cases, under favourable conditions, major parts of the rock itself can be mined or quarried. Examples include limestone, nepheline syenite, rock salt, gypsum and potash. Space does not permit an attempt here to point out the interrelation of mineral deposits to their geological setting and, in many cases, much remains to be learned about the origin of many types of base and precious metal ores. However, ore deposits are not randomly distributed 'freaks', but comprise rare concentrations of materials formed under particularly favourable geological conditions during the building of the Continent. Efficient exploration by mining companies and evaluation of the mineral potential of the nation depend on geological information and knowledge, augmented by geophysical and geochemical tech-

GEOLOGICAL TIME CHART


niques. By 1966, geological maps had been published covering about 75 p.c. of Canada's land surface, and geophysical maps showing variations in magnetic intensity caused by various types of rocks had been published by federal and provincial agencies covering 38 p.c. of the country as well as parts of the continental shelf. (See also pp. 32-33.)

The primary geological subdivisions of Canada are outlined in the following sections. The Canadian Shield forms the ancient nucleus of the Continent. As well as comprising the vast areas exposed in Central and Northern Canada, the Shield extends beneath the veneer of younger marine sediments exposed at the present surface in the Hudson Bay region, some Arctic islands, the St. Lawrence Lowlands and the Interior Plains. West of the Interior Plains, and north and southeast of the Canadian Shield, deep, elongate troughs (geosynclines) developed. These geosynclines received sediments and volcanics which, by folding, were converted into the mountain belts of the Cordilleran, Innuitian and Appalachian regions.

The Canadian Shield.-Precambrian evolution of the present Canadian Shield extended over more than five sixths of known geological time. During this immense interval, many cycles of volcanism, sedimentation, intrusion, metamorphism, mountain building, erosion and ore formation have been completed. The complexities of this history have become better understood as the rate of geological reconnaissance mapping, with the support of helicopters since 1952, has increased and as absolute ages of minerals have been determined by isotopic ratios from about 1,500 well-distributed samples of the Canadian Shield. Many of the absolute ages represent the ages of four main orogenic periods, as indicated on the geological time chart facing p. 20. The facing map shows the eight structural provinces currently recognized in the Shield. Each structural province is defined by the equivalent isotopic ages of their terminal orogenies as well as being characterized by variations in rock types, degree of metamorphism, and dominant types of ore deposits. Following one or more major orogenies in a region, that portion involved was stabilized, and relatively undeformed younger Precambrian erosion products were deposited to form basins of cratonic cover rocks, most of which are shown on the map of the Shield. These relatively undeformed late Precambrian basins and remnants of early Palæozoic sediments show that the Canadian Shield has been remarkably stable since late Precambrian time, subject only to encroachment of younger seas and varying degrees of uplift.

Pleistocene glaciation, with scouring of bedrock and deposition of clastic materials, has profoundly affected the present drainage and physiography of the region.

The rocks of the Superior and of the far smaller Slave and Eastern Nain structural provinces were intruded by granites and folded during the Kenoran orogeny about 2,500,000,000 years ago. The Superior province now comprises a succession of folded belts of volcanic and sedimentary rocks trending east-west, separated by considerably larger areas of granite gneiss and granitic rocks. The elongate remnants of folded greenstone belts within the granitic terrane are up to 300 miles in length. Parts of these folded belts are dominantly sedimentary greywackes and slates which include iron-formations but are not known to contain major sulphide ore deposits. Other parts comprise dominantly mafic, somewhat altered volcanics (greenstones), lesser but economically significant rhyolitic voleanics, various types of economic and non-economic iron-formations which are being mined at four or more localities, some greywacke, slate and graphitic slate and, in association with these rock types, massive pyritic ore deposits containing zinc, copper, silver and gold. Deposits of this type at Noranda, Timmins, Manitouwadge, Matagami and Chibougamau rank among the large base-metal deposits of the world. Famous gold-quartz vein deposits are mined in the greenstone belts at Timmins, Kirkland Lake and Noranda-Val d'Or areas. In the Slave province, structural trends are more irregular than in the Superior province, but the important gold veins of the Yellowknife district and gold deposits being evaluated south of Bathurst Inlet also lie in volcanic belts. Deposits associated with pegmatites of the late stages of Kenoran granites contain lithium, molybdenum, beryllium and caesium.

Following the Kenoran orogeny in the Superior province, thick sedimentary beds of Proterozoic age were derived from the erosion of the deformed Archæan rocks in the region north of Lake Huron, and basal conglomerates of the Huronian beds at Elliot Lake contain about one third of the reported uranium reserves of the world. Even younger undeformed beds and diabase sills about 100 miles northeast of Lake Huron form cratonic cover rocks about $2,100,000,000$ years old and contain the famous silver-cobalt veins of the Cobalt mining camp. In the same general region, the noritic intrusions near Sudbury were later emplaced during the Hudsonian orogeny to yield the world-renowned nickel-copper-platinum deposits of the Sudbury basin. As a result of these geological processes of many types and of varied Precambrian age, a belt about 150 miles wide extends northeast from Lake Huron and lies to the northwest of the Grenville province. This belt has produced a great proportion of Canada's gold and base-metal production to date.

The Churchill province is exposed as a giant arc underlying northern Manitoba and Saskatchewan, much of the Northwest Territories, the northern tip of Quebec and the Labrador Trough. The rocks of the Churchill province and the much smaller Bear and Southern provinces were folded, metamorphosed to various degrees, and intruded by granitic rocks during the Hudsonian orogeny about 1,700,000,000 years ago. The general rock types of these provinces are similar to those of the Superior province. In the southwestern Churchill province in northern Manitoba, major nickel deposits with lesser copper are being mined from both gneisses and from metamorphosed mafic intrusions which lie adjacent to the boundary of the Superior province. Nickel-copper ore is also mined from contorted gneisses at Lynn Lake, and numerous massive sulphide base-metal deposits in greenstones have been exploited in the Flin Flon district. Farther north, beginning on the north shore of Lake Athabasca at the Beaverlodge uranium camp, a belt of greenstones, sediments and their metamorphosed equivalents extend northeastward to Hudson Bay. Rankin Inlet, near which nickel was formerly mined, lies at the eastern exposed end of this imperfectly known belt. Relatively inaccessible belts such as this, although seemingly favourable for ore deposits, have not been prospected nearly as intensively as similar geological environments in more populated areas. Most of Baffin Island is underlain by contorted rocks of the Churchill province. Of particular interest is the recent discovery and serious evaluation of an exceptionally high-grade iron deposit in northwestern Baffin Island. Of geological interest are intricately folded formations of marble in southern Baffin Island, a rock type generally uncommon in the pre-Grenville portions of the Canadian Shield. A greenstone belt in the Churchill province containing nickel and asbeatos occurrences of potential economic interest lies at the northern tip of Quebec and extends easterly from Cape Smith, Hudson Bay. Of major importance is the extension of the Churchill province as the Labrador Trough south from Ungava Bay to its merging and metamorphic involvement with the Grenville province. Rocks of the Labrador Trough adjacent to and east of the older Superior province are not significantly metamorphosed but are converted to schists and gneisses farther to the east. The relatively unmetamorphosed western belt comprises slate, quartzite, dolomite and cherty iron-formation, with mafic volcanics abundant farther to the east. In many parts of the western trough, iron-formation has been closely folded and much of the silica removed. These enriched portions, together with their metamorphosed equivalents which extend into the Grenville province, now provide the bulk of Canada's iron ore production.

A large part of the Shield, extending from Georgian Bay to the Strait of Belle Isle, has long been recognized as forming a distinct segment called the "Grenville" It was named after the Grenville series, characterized by crystalline limestone, jmpure limy strata, and large areas of sedimentary gneisses in various stages of alteration to granite. The eastern part of the province contains large igneous intrusions of anorthosite. The age relations between Grenville strata and those of the neighbouring Superior province are puzzling. Near Sudbury, as well as at the south end of the Labrador Trough, beds can be traced across the boundary into more metamorphosed rocks of Grenville type. It is believed, therefore, that the distinctive features of the Grenville may be related more to the time and degree of metamorphism than to distinctions in the original age of deposition of
strata. The Grenville province contains an unusually large variety of mineral occurrences but has not been as important a producer as the Superior. Several fairly large deposits are mined, including those of nepheline syenite near Peterborough, iron of the magnetite variety at Bristol and Marmora, zinc and lead in the Ottawa Valley and iron and titanium near Havre St. Pierre. Large iron deposits are in production at the southern extension of the Labrador Trough.

The areas of undeformed Precambrian cratonic cover rocks shown on the map facing p. 21 represent dominantly clastic detritus washed into basins from the consolidated, nearby, older rocks. At times, marine incursions into these basins led to deposition of limestone and dolonite, and volcanics were deposited in others. Copper deposits similar to those of the Keweenan Peninsula of Michigan, copper-uranium-vanadium in sandstones, and base metals in some of the limestones of the cover rocks could be present in this geological environment but economic deposits of this type have not yet been discovered.

The Appalachian Region.-This region comprises the Maritime Provinces and southeastern Quebec and is the northern continuation of a long belt of folded strata extending along the eastern side of the United States. It is on the site of a long, linear trough or geosyncline that existed mainly in Palæozoic time in which great thicknesses of sedimentary and volcanic strata were laid down. The northwestern boundary of the region lies adjacent to the Canadian Shield and to the St. Lawrence Lowlands. The strata in the Appalachians have been folded and faulted along axes that strike northeasterly except for local regions such as the Gaspe Peninsula where strikes swing to the east. Thus, strata of different kinds and ages and some belts of intrusive rocks normally form northeasterlytrending bands, many of which are responsible for development and orientation of peninsulas, bays and ridges of the region. Two principal periods of orogeny called the Taconic and the Acadian have been recognized. The Taconic occurred near the close of Ordovician time and the Acadian about Middle Devonian time. In Canada the Taconic disturbances were fairly widespread, the Acadian were more so, affecting areas that were previously affected by the Taconic as well as areas that were not, and the Appalachian orogeny, which was a major feature in parts of the United States, was of minor and local importance.

Metamorphosed Precambrian rocks of Grenville type are exposed to form the Long Range of western Newioundland and small areas in Cape Breton and New Brunswick. On the east flank of the Appalachian geosyncline, as exposed in southeast Newfoundland, younger Precambrian volcanics and sediments are relatively unaltered and were intruded by small granite bodies $580,000,000$ years ago. Although Precambrian rocks probably underlie much of the central Appalachians, they are buried beneath the thick Palmozoic sequence. Pyrophylite in southeast Newfoundland is the only product being mined from Precambrian rocks in the Canadian Appalachians.

Cambrian slates, minor limestones and local areas of volcanics lie above and adjacent to Precambrian rocks. Massive sulphide deposits in schists derived from Cambrian volcanics in southern Cape Breton and southeast Quebec were formerly mined. The overlying Ordovician beds were formed at the early stage of development of the Appalachian geosyncline. From west to east, and depending on their position in the geosyncline, the thick Ordovician sections comprise limestone and/or slate in western Newfoundland and adjacent to the St. Lawrence Lowlands in southeast Quebec. Mineral occurrences of zinc and lead-zinc are currently being evaluated in dolomitic limestones. Of major economic importance are Ordovician submarine volcanic rocks and their metamorphic equivalents in north-central Newfoundland, the Bathurst district of northern New Brunswick, and the Eastern Townships of southeast Quebec. These rocks are the hosts for all the massive, pyritic base-metal deposits being mined and developed in the Canadian Appalachians. In particular, the Bathurst mining camp and its new smelter complex promises to be a major factor in the economy of the region for many years, and the Buchans mine in central Newfoundland has produced since 1928 from orebodies which contained more than $15,000,000$ tons of ore. East of this Ordovician voleanic belt, thick deposits of slates and sandstones were formed at the same time as the mineral-bearing volcanics were
being deposited. Mineral deposits formed during sedimentation include the Wabana iron mine in southeast Newfoundland which terminated operations early in 1966 after about 70 years of continuous production. Some $490,000,000$ years ago, molten ultramafic rocks rose from great depths and were emplaced as thin, tabular bodies mainly in the volcanic Ordovician areas. Subsequent alteration of parts of these folded, elongate bodies has produced the giant asbestos deposits of the Eastern Townships of Quebec, and one deposit being mined in northeast Newfoundland. Occurrences of nickel or chromite associated with the ultramafics seem of limited economic promise to date, although minor production has been attained. Silurian strata are rather similar to Ordovician rocks but are not known to contain large mineral deposits. Unlike the Ordovician submarine volcanics, some or most of the Silurian volcanics were formed on land. This may be one factor in the marked difference in known ore content of the two volcanic assemblages.

In Devonian time, granite batholiths were emplaced in the Maritime Provinces, and smaller stocks of the same age were intruded in Gaspe and southeastern Quebec. At this time, older beds were folded and metamorphosed to varying degrees, particularly near the margins of the granites. An important deposit currently being mined and supporting its smelter at Murdochville in central Gaspe will provide several tens of millions of tons of low-grade copper ore from altered limy slates above one buried granitic stock of Devonian age. Other similar deposits are being actively explored in the district. In Ordovician sediments near granites of Nova Scotia, scores of gold-bearing quartz veins were mined from 1862 to 1957 but the individual veins are not likely to be workable under present conditions. Fluorite in veins within Devonian granitic rocks at St. Lawrence, Newfoundland, have been mined since 1933 and currently yield all of Canada's production. Tungsten and molybdenum deposits associated with granites in central New Brunswick, southeast Quebec and southern Newfoundland are re-appraised periodically but have not been mined.

Following the folding and granite intrusion that formed the Appalachian Mountains, adjacent basins were rapidly filled with coarse and progressively finer-grained detritus eroded from the adjacent mountains. Some areas included marive beds, such as the petroliferous Albert shales of eastern New Brunswick which yield oil and gas. Other areas were the sites of rhyolitic volcanism early in Mississippian time, and rocks of one such centre in southern New Brunswick contain a deposit of tin, lead, zinc and molybdenum, which has been extensively investigated. After initial infilling of basins, shallow Mississippian seas encroached on the valleys and deposited limestones. Where evaporation exceeded the rate of saltwater inflow to these marine basins, evaporites were precipitated to form commercial deposits of rock salt and gypsum, and known occurrences of potash minerals. Native sulphur in unknown quantity is associated with evaporites in central Nova Scotia. A large deposit of barite with associated lead-zinc-silver ore is mined from replaced Windsor rocks at Walton, Nova Scotia, and many rather similar occurrences are known elsewhere in Windsor limestones. Many thousands of feet of clastic sediments were deposited after the Windsor seas retreated. These beds of Pennsylvanian age contain the commercial coal measures of Nova Scotia. In Triassic time, outpourings of basalt, particularly preserved adjacent to and below the Bay of Fundy, terminated rockforming processes in the Appalachians. Subsequent erosion has yielded the present, fairly subdued topography of this former mountain chain.

The Cordilleran Region.-The Cordillera of Western Canada consists of three parallel northwest-trending geological and topographical systems. The Eastern System of western Alberta, eastern British Columbia, eastern Yukon, and western Northwest Territories includes the Rocky, Richardson, Franklin and Mackenzie Mountains and foothills, and several intervening plateaux. Comprising the Western System are the Coast Mountains along the west mainland of British Columbia, the St. Elias Mountains in southwest Yukon, the Queen Charlotte Islands and Vancouver Island. The Interior System lies between the Eastern and Western Systems. It contains the plateaux, plains and subdued mountain ranges of the interior of British Columbia and Yukon Territory.

Unmetamorphosed Precambrian to Cretaceous sedimentary strata form most of the Eastern System. These sedimentary strata, which have been uplifted several thousand feet by fault movements, are well exposed in the Rocky Mountains. The Interior System is composed largely of metamorphic, sedimentary and volcanic rocks of Precambrian to Mesozoic ages, which are intruded by numerous, generally unconnected, granitic stocks and batholiths. In places, these rocks are overlain by great thicknesses of Cretaceous and Tertiary volcanic and sedimentary strata. Flat-lying Tertiary basalt flows form many of the plateaux. In the Western System, the rugged Coast Range consists of almost continuous exposures of steeply eroded granitic rocks of Mcsozoic and Tertiary ages flanked on both sides by late Paleozoic and Mesozoic volcanic rocks and by basins of Cretaceous and Tertiary sedimentary rocks.

During late Precambrian times, beds of quartzite, argillite, dolomite and other sedimentary rocks now comprising the Purcell and Windermere beds were deposited in the eastern Cordilleran geosyncline, a vast shallow ses that extended from south of the present Canada-United States border to the Arctic Ocean. From Cambrian until mid-Devonian time, sedimentary strats consisting of shale, quartzite and limestone continued to be deposited in the area which now forms the Esstern and Interior Systems. In southeastern British Columbis, the world-famous Sullivan zinc-lead orebody lies in Purcell beds and is thought to have formed during late Precambrian time.

Beginning in the mid-Devonian and lasting until early Jurassic, the Western System and most of the Interior System consisted of a deep oceanic trough in which secumulated submarine basalts and fine argillaceous and cherty sediments such as those of the PermoCarboniferous Cache Creek Series and the Triassic Takla Series. Meanwhile, sedimentary strata were forming in the more shallow waters of the Eastern Sybtem, east of the present Rocky Mountain Trench. Thus, in the Rocky Mountains, Palæozoic limestones, dolomite, quartzite and shale are overlain in many places by similar Mesozoic rocks.

The first large granitic bodies were intruded into rocks of the Interior and Weatern Systems during early Jurassic time. They were composed mainly of granodiorite and quartz diorite, but ranged in composition from gabbro to granite. These intrusions were accompanied by folding, faulting and metamorphism. Although this orogeny may have been most intense during late Jurassic to early Cretaceous time, intrusion continued until early Tertiary time. Many mines in the Cordillera are related to Mesozoje and Tertiary intrusions. Uplift of the rocks during these processes created mountain chains and, by early Cretaceous time, rhyolites, andesites, basalts and sediments were being deposited in inter-mountain basins largely separated by the uplifted areas. Erosion of the mountains followed and, in late Cretaceous time, sandstones, conglomerate, shale and extensive beds of coal accumulated in large isolated basins such as that now occupied by the Nansimo Series on Vancouver Island. Gradual uplift continued so that by Tertiary time the basins were very local and entirely continental. Sandstones and other sediments derived from elevated areas continued to be deposited in the low-lying valleys.

Uplift and mountain-building in the Esstern System was delayed until the Laramide Orogeny in early Tertiary time. Unlike the earlier orogenies to the west, no significant granitic bodies were intruded in the Eastern System. In many parts of the Rocky Mountsins, Precambrian and Paleozoic strata were thrust several miles to the east along low-angle westward-dipping fault planes. Thus, these transported older rocks commonly came to rest above younger beds. At the same time and again in late Tertiary time, the eroded Western and Interior System rocks, as well as those of the Eastern System, were again uplifted. Erosion, including glacial scouring, which in places has continued to the present day, formed deep valleys in the elevated rocks and has produced the present configuration of the Coast Range, the Rockies and the intervening mountain chains.

In the Interior System, much lava was deposited on the plateaux at various times during the Tertiary Period, mainly in or about Miocene time. The lavas are chiefy basaltic and apparently welled from long fractures rather than from individual volcanoes. gandstone, shale and volcanic ash were deposited in local freshwater basins in the same belt.

In latest Tertiary and Pleistocene times, some uplift and minor volcanic deposition occurred in the Western and Interior Systems. Very recent, post-glacial volcanic activity is represented by several well-preserved cinder cones in north, southwest and central British Columbia.

Glaciation, as in other parts of Canada, was widespread in the Cordillera during the Pleistocene Epoch, and glaciers persist today in many mountain systems, chiefly in the St. Elias and Coast Mountains and the Columbia Ice Field in the Rockies. A large part of the Yukon Territory, however, escaped Pleistocene glaciation because the high St. Elias Mountains barred moisture-laden winds from the Pacific to such an extent that ice did not accumulate in parts of the interior, despite the depressed temperatures of the time. This lack of glaciation was largely responsible for the preservation of the Klondike placer gold deposits.

The Cordilleran region has long been an important producer of economic minerals. Coal mining thrived over 100 years ago at Nanaimo on Vancouver Island and the gold rushes to the Klondike and Cariboo-Fraser Rivers regions resulted in the economic development of the Yukon and the interior of British Columbia. Present mineral production for the Cordillera is approximately one tenth of the Canadian total.

All parts of the Western and Interior Systems, except those covered by Tertiary plateau lavas and sediments, are favourable for the occurrence of metals. Metal occurrences are very minor in the Eastern System but appreciable amounts of oil and natural gas are found, mainly in the foothills.

Many of the metallic mineral deposits are related to granitic intrusions of the Jurassic to Tertiary intrusive cycle but others may have been present before the cycle and some were probably metamorphosed by the intrusions. Copper, gold, molybdenum and iron are the main metals produced in the Western System and western portions of the Interior System, whereas lead, zinc and silver are most important in the eastern parts of the Interior System. The ores in general are complex and a single mine may supply gold, silver, copper, lead and zinc.

The lead-zinc-silver mines of the eastern part of the Interior System in the Kootenay and Slocan districts of southeast British Columbia occur in Precambrian and lower Palæozoic sedimentary rocks. The Precambrian Sullivan orebody of the Kootenay district is one of the largest lead-zinc-silver deposits in the world. Another large producing area is at Mayo in the Yukon Territory. Cadmium, antimony and bismuth are recovered from many of the lead-zinc-silver ores.

Most copper ores of the region are large low-grade sulphide deposits related to Mesozoic or Tertiary granitic bodies. These include the Bethlehem deposits at Highland Valley, British Columbia, the Britannia mine near Vancouver, and several deposits that will soon be mined in the Smithers, Stewart and Stikine areas of the northern part of the province. Many of these mines contain recoverable molybdenum. High-grade skarn copper deposits oceur at Merritt in the interior of British Columbia and on Vancouver Island.

Owing to intense mineral exploration in recent years, British Columbia has become a major producer of molybdenum. Large deposits at Endako and a smaller high-grade deposit at Boss Mountain are at present being mined. They are related to Mesozoic batholiths. Other promising large deposits are undergoing exploration or development.

The gold-quartz veins of British Columbia appear to have been derived from Mesozoic and Tertiary batholiths. Only two deposits of this type are at present being mined and most gold produced in the Cordillera is derived as a by-product of copper, iron and leadzine mining. The rich placer deposits that sparked the beginning of the mining industry in the Cordillera are of minor modern importance.

Iron deposits containing magnetite are being mined on Vancouver Island, the Queen Charlotte Islands and Texada Island. They occur in skarn zones along the contacts between granitic intrusions and Triassic limestone. Precambrian sedimentary iron deposits in the Yukon Territory may be developed in the future.

Mercury was mined mainly at Pinchi Lake, British Columbia, during World War II. These occurrences are now being re-evaluated. Nickel is mined near Hope in British Columbia and tungsten is recovered from a deposit in the Northwest Territories adjacent to the Yukon Territory. High-grade, long-ibre asbestos is extracted from a peridotite body at Cassiar in northern British Columbia.

Coal beds in Lower and Upper Cretaceous and Tertiary sedimentary basins are found in many locations throughout the Cordillera. Past production was much greater than at present but the possibility of increased demand for coal may reactivate several mines. The main producing areas include Comox on Vancouver Island, Crowsnest coalfield in southwest British Columbia and Alberta, and Luscar in the Alberta foothills.

Although most of the oil and gas fields of Alberta and British Columbia are east of the Cordillera in the Interior Plains of Alberta, several large fields are found in the foothills. The important Turner Valley field, which was discovered in 1913 and has produced since 1936, contains large oil and gas reserves in a faulted anticline in Mississippian strata. Oil is found in Devonian reef limestone at Norman Wells in the Northwest Territories. Sulphur is an important by-product of many fields containing natural gas.

Innuitian Region.-North of the Arctic Plains and Plateaux, where Paleozoic limestones rest on Precambrian generalty-stable crystalline rocks, deep crustal depressions were initiated in late Proterozoic time and received thick deposits of carbonates and shales (miogeosynclinal type) and, in northern Ellesmere Island, volcanics and greywackes (eugeosynclinal type). In the southern basins, Proterozoic sediments are mainly carbonates and coarse to fine clastic sediments. Overlying these conformably are thick layers of lower Palæozoic carbonates which are thicker and include more abundant dark shales to the north. Middle Ordovician gypsum beds extend in places across the southern basins. Carbonates are admixed with muds and sands in parts of the Upper Silurian to Middle Devonian beds, and the influx of these clastic materials probably reflects relatively minor orogenies and periodic uplifts such as the Boothia Arch in the region. Folding of the eugeosynclinal volcanics of northern Ellesmere Island produced land areas from which sands were swept southward to form Upper Devonian non-marine sandstones in the miogeosynclinal basins. The total assemblage of sediments is more than 35,000 feet thick in some districts. The dominant folding of the Franklinian geosyncline, called the Ellesmerian orogeny, occurred near the close of Upper Devonian time. With the exception of the Cornwallis fold belt discussed below, the resulting folds of the Innuitian Region trend southwesterly from northern Ellesmere Island and swing westerly through the Parry Islands. The Cornwallis fold belt interrupts this trend at right angles because it lies along a buried north-trending prong of Precambrian rocks, which extend from exposures of the Boothia Peninsula. This elongate Precambrian basement rose periodically at least six times to produce north-trending faults and folds in the overlying Palæozoic beds of the Cornwallis fold belt, whereas the Franklinian geosyncline was deformed by somewhat younger and more widespread compressional crustal forces.

Following the Ellesmerian orogeny, a vast area including the present Sverdrup Islands and much of western Fllesmere Island was depressed to form the site of deposition of a composite thickness of 60,000 feet of Pennsylvanian to Tertiary volcanics, shales, sandstones, some gypsum and, in the upper part, a thick assemblage of non-marine clastic sediments. The rocks of this Sverdrup Basin were deformed about the end of the Mesozoic Era by the Laramide orogeny. Late Palæozoic gypsum beds, which tend to flow under high pressure, were forced upward to intrude overlying Mesozoic beds. Gypsum diapiric domes later penetrated Tertiary beds. No salt or potash-bearing minerals are as yet known to be associated with the gypsum, although a few minor occurrences of native sulphur have been found. A zine-lead deposit being evaluated in limestone or dolomite on Little Cornwallis Island is unique in Canada, because much of the zinc occurs as the carbonate smithsonite, rather than sphalerite, the usual sulphide. Coal is widely distributed in the Innuitian Region, particularly in Upper Devonian beds of the Franklin miogeosyncline and in three formations within the Sverdrup Basin. As in the case of the

Arctic Lowlands and Plateaux, geological conditions are favourable for commercial petroleum accumulation but serious exploration guided by known regional geology has only recently begun in this vast area. Lead and zinc deposits in dolomitic, reefoid limestones might be expected on geological grounds. Regions in which reefoid dolomites lie near boundaries of calcareous rocks where they change to dark shales of the same age might be most favourable, according to some genetic hypotheses. Massive, pyritic base-metal sulphide deposits would probably be most likely to lie within voleanics in the northern, eugeosynclinal belt of the Franklinian geosyncline.

Arctic Lowlands and Plateaux.-These geological and physiographic divisions lie in large basins separated by arches and belts of exposed Precambrian crystalline rocks. Gently inclined or flat sediments underlying the basins tend to be thin sandstones and limestones near the basal contact with metamorphosed Precambrian rocks but limestones and dolomites of Middle Ordovician to Early Devonian age are the principal rock types and at some localities are estimated to be up to 18,000 feet thick. Shales, sandstones and restricted areas of conglomerates of Middle Devonian to Late Devonian age are normally the youngest rocks preserved.

Reefoid, vuggy dolomites of Middle Ordovician to Middle Silurian age commonly contain bituminous residues in surface exposures, structural and stratigraphic traps are probably present, and thick sections of potential source beds of petroleum and gas are known. Active oil seepages have not been reported. Petroleum exploration, aided by prior geological knowledge and published maps, began during the mid-1950s.

Beds of gypsum admixed with some shale up to 970 feet thick are exposed in many localities in Middle Ordovician beds. If more soluble evaporite minerals such as rock salt and potash-bearing minerals had been formed with gypsum, they would be leached from surface outcrops, but could be disclosed in future drilling. Piercement domes of gypsum, locally with occurrences of native sulphur, are found in the Sverdrup Basin. Coal is rare here, although abundant in the Innuitian Region.

Arctic Coastal Plain.-This plain comprises late Tertiary or Pleistocene sand and gravels, which dip gently seaward along the northern exposed border of the Innuitian Region. The very young beds cover the extensions of eroded fold belts and the Sverdrup Basin. Although of minor land extent, they or their equivalents probably extend far out on the Arctic continental shelf.

The Interior Plains.-The Interior Plains are underlain by undisturbed or gently flexed or tilted sedimentary strata, which overlap the western border of the Canadian Shield and merge with the eastern foothills of the Cordilleran region. The Shield slopes at a rate of 15 feet per mile under the Great Plains, in the western part of which the overlying strata reach a thickness of 10,000 feet. The older overlying beds have been bevelled by erosion along the border of the Shield, exposing in central Manitoba marine beds of limestone, sandstone and shale of Ordovician, Silurian and Devonian ages. Farther north the exposed Palæozoic strata are mainly Devonian. The Palæozoic formations are overlain by early Mesozoic strata of marine origin and these by both marine and freshwater Cretaceous formations, which are the uppermost strata in much of Saskatchewan and Alberta. In places, however, as at Turtle Mountain in Manitoba and the Cypress Hills in Saskatchewan, these are overlain by remnants of early Tertiary formations.

The rich soils of the Great Plains, particularly in the Manitoba Plain, were derived from the weathering of the underlying strata and the unconsolidated deposits resulting from glaciation. Most of Canada's oil and gas is produced from Palaozoic and Mesozoic strata underlying the Great Plains, mainly in Alberta but also in Saskatchewan, Manitoba and northeastern British Columbia. The productive beds range from Devonian to Cretaceous in age, the reservoir rocks being largely reefs containing openings, although "stratigraphic" traps such as lenses of porous sediments overlain by non-porous ones are also important. Exploration for oil and gas has recently been extended through most of
the plains including those in the Arctic Archipelago. The Athabasca oil sands, extending for more than 100 miles along the Athabasca River in northern Alberta, are accumulations of heavy oil and sand of Early Cretaceous age. The total amount of oil in these sands is estimated at $100,000,000,000$ to $300,000,000,000$ barrels, more than all other known reserves of the world. Present and potential production of potash in southern Saskatchewan represents a major source in terms of world supply. These Middle Devonian evaporites are estimated to contain more than $100,000,000,000$ tons of potash. Coal is being or has been produced from many places in the Great Plains, which also yield salt, gypsum, limestone and other non-metalliferous products. Important deposits of zinc and lead are being mined in Devonian limestone at Pine Point, Great Slave Lake.

St. Lawrence and Hudson Bay Lowlands.-The St. Lawrence Lowlands are underlain by marine beds deposited during much of Palæozoic time. Rather similar late Ordovician to Devonian beds are exposed in the Hudson Bay Lowlands. Small areas of Palaozoic beds are preserved at various localities on the Canadian Shield between these two Lowlands and suggest that arms or shallow straits of Palæozoic seas may have connected the present Hudson Bay and the St. Lawrence Lowland areas. The St. Lawrence Lowlands from Quebec City to Windsor are occupied by about one half the population of Canada, supported by much arable land and major industrial concentrations. These Lowlands are divided by an exposed southeasterly-trending prong of the Canadian Shield called the Frontenac Axis, which extends into the United States northeast of Lake Ontario. Southwest of the Frontenac Axis, marine sedimentary rocks of Cambrian to Mississippian age rest on buried Precambrian rocks. Known formations there have an aggregate thickness of almost 6,000 feet. Rocks are mainly limestones, shales and sandstones deposited in generally shallow seas. During Silurian time, evaporation exceeded saltwater inflow in some areas and the salt and gypsum beds within the Salina Formation were deposited. In part because of their position near industrial centres, roughiy 80 p.c. of the salt produced in Canada is recovered by evaporation of brines and from two mines adjacent to the southeastern shore of Lake Huron. Gypsum is also mined from the Salina Formation. Petroleum has been produced continuously since 1859, mainly from Devonian beds, and natural gas has been produced since 1889, mainly from Silurian beds. Fluorite was at one time produced in moderate tonnages from veins in Ordovician limestone near Madoc in Ontario.

Northeast from the Frontenac Axis to Quebec City, only lower Palmozoic beds are present. Cambrian sandstone and thick beds of Ordovician limestone and shale attain thicknesses of up to 10,000 feet. Showings of petroleum and natural gas are known in some of the 185 exploratory wells drilled but no production has been attained. Sandstones of high silica content are quarried near Montreal, Quebec. Because of the population and industrial concentration in both the above sections of the St. Lawrence Lowlands, large amounts of limestone, shale and sandstone are quarried for structural materials, cement production and chemical needs. Such products have a low unit value and can be profitably extracted only within low-cost reach of their consumption points.

Anticosti Island is an isolated, northeastern division of the St. Lawrence Lowlands. Exploratory drilling for petroleum shows a thickness of up to 6,146 feet of Silurian and older Palæozoic sediments underlying the island, with Precambrian crystalline rocks at greater depths. Showings of oil and gas in one of five holes were not considered of commercial value.

The Hudson Bay Lowlands are underlain by flat-lying Ordovician to Devonian beds and Upper Cretaceous lignite, sand and fire clay. The beds attain a variable thickness of at least 1,536 feet in southern James Bay. Post-Precambrian beds near the centre of Hudson Bay are indicated by a seismic survey made by the Geological Survey of Canada to be up to 5,905 feet thick. Deposits of gypsum and lignite are known but not exploited.

## Surficial Deposits

The continental glaciation of most of Canada has removed weathered bedrock and residual soils and has almost certainly removed some types of ores such as pre-Pleistocene placer gold deposits, laterites, and upper portions of metallic and manganiferous ore deposits, which had formerly been enriched under stable near-surface conditions. Material deposited includes dominantly clastic detritus such as tills, esker gravels, outwash gravels and sands, or rock flour deposited in lakes or shallow seas in the form of multiple layers of varved clay or massive clay beds. Maps showing the surface distribution of these materials are published by federal agencies and reflect some physiographic features and present and potential land use.

Much of Canada's bedrock surface and ore deposits are covered by such glacially derived surficial deposits. Gravel, sands and clays are extensively used in industrial regions and for earth dam construction, and coarse materials are used for road-building. Other beds or ancient river channels comprising gravels and coarse sands constitute important sources of groundwater. The nature and mechanical properties of glacial deposits must be well known for foundation design of large buildings, for dam design and for other engineering projects. Orebodies now covered by glacial material contributed blocks or grains of ore to the detritus during glaciation. Such blocks or heavy mineral grains can be found and in some cases traced back to their point of origin if the direction(s) of glacial transport can be deduced and it the history of transport is not too complex. Groundwaters circulating through ore and overlying surficial material may transfer metals in solution and enrich the nearby surface soil or stream sediments. Because so much of Canada's bedrock area is screened by surficial deposits, geochemical surveys to detect surface geochemical anomalies have been the initial clue to the discovery of some of its ore deposits. Other anomalies are known to be derived from non-economic mineralization or, where the path followed by groundwater from ore to surface is complex, the source of some surface anomalies remains unknown. Federal and some provincial geologists conduct regional geochemical surveys and supporting research, and mineral exploration companies make extensive and more detailed use of the geochemical prospecting methods.

## Geophysics in Canada

Canadian scientists have played a major role in the development and application of airborne and ground geophysical instruments and techniques to probe below the suriace of the land, the lakes and continental shelves. Regional surveys of variations in the earth's magnetic field are conducted with the use of aircraft by federal and joint federalprovincial agencies and results are published as aeromagnetic maps. Federal scientists have probed the Palæozoic beds and the surface of their buried basement in Hudson Bay and parts of the continental shelf by seismic methods; they make accurate measurements of the force of gravity at a network of Canadian stations, and record earth tremors and calculate their points of origin. Oil companies commonly conduct seismic and geological studies over large areas as the principal means of selecting promising drill sites. Mineral exploration companies normally select a district which they consider geologically favourable, carry out combined airborne electromagnetic and magnetometer surveys and then survey anomalous localities on the ground with more detailed electromagnetic, magnetic and/or gravity surveys. After geological examination and geochemical studies, these combined data allow selection of initial drill sites where drilling still seems warranted.

Aeromagnetic surveys measure variations in the earth's magnetic field caused by nearsurface differences in the magnetic properties of bedrock and to a lesser extent by deeper bedrock features. These surveys bave been vigorously conducted and have yielded


seromagnetic maps of 38 p.c. of Canada's land surface as well as parts of the continental shelves off Nova Scotia and Hudson Bay and other Arctic waters. On regional scaleb, these maps materially aid in preparing geological maps, particularly in areas of extensive surficial cover, and aid mineral exploration by indicating the trends of rock units selected as being potentially favourable. One of the earliest of the aeromagnetic surveys in 1949 by the Geological Survey of Canada clearly pin-pointed and led to the discovery by an exploration company of the present Marmoraton iron mine, although the ore was completely covered by about 125 feet of flat-lying limestone. The compilation and reduction in acale of many individual aeromagnetic maps, as in the accompanying illustration, shows major structural trends in the Canadian Shield over an area of 71,000 square miles. The heavy northeast-trending line marks the boundary between the Superior province on the southeast and the Churchill province on the northwest. Northeast of the dotted line on the map, the Precambrian rocks are completely covered by flat-lying limestones of the Hudson Bay Lowlands, yet the structural trends in the basement rocks were readily detected.

Regional sea-selsmic and aeromagnetic surveys of parts of the Atlantic and Arctic continental shelves are completed and in progress in order to evaluate the deeply buried sequences and structures below these relatively shallow waters and to prepare for more detailed company exploration for off-shore oil and gas.

Electromagnetic methods are principally used by exploration companies to detect buried bodies of anomalous electrical conductivity with respect to normal bedrock. Most conductors so detected prove to be caused by graphitic or barren pyritic zones and are of no commercial value, but a small proportion prove to be orebodies such as a single remarkable discovery, announced in 1964, near Timmins in Ontario.* Prior to drilling, it is commonly not possible to distinguish details of the conductor. Current research in the Geological Survey of Canada is in part directed toward the use of magnetotelluric currents in the detection of buried sulphide deposits but more effort is expended in applying electromaguetic methods to the study of the stratigraphy and nature of unconsolidated sands, gravels, clay and till. These studies, combined with shallow seismic surveys, have been particularly rewarding in defining buried river channels that contain abundant groundwater.

Seismic surveys to depths of about 180 feet are readily made by sending shock waves into the ground from a sledge-hammer blow and recording their reflections. The detection of groundwater reserves, or surficial aquifers, both in surficial material and bedrock, ia one application of the method, as discussed above; or depths to bedrock for heavy construction or mineral exploration problems may be determined at relatively low cost. Penetration deep below the surface is effected by detonating explosive charges on land or sea, and recording the reflections of waves from deeply buried, folded or flat-lying strata, or detection of variations, such as oil-bearing reefs, within strata. The Geological Survey of Canada recently defined the thickness of potential oil-bearing strata beneath the waters of Hudson Bay by this method.

Research continues in other new methods of rapidly detecting potentially useful physical variations at and near the earth's surface. Airborne infra-red imagery, for example, discloses slight variations in apparent surface temperature. Several applications are being investigated such as detection of cold groundwaters or hot springs discharging into lakes or rivers, detection of discharge points of warm industrial waste waters, or possibly slightly warmer land surfaces which might be related to sources of geothermal power or some types of ore deposits. The geiger counter and scintillometer continue to

[^8]greatly aid prospecting for uranium. More sophisticated gamma ray spectrometers are now being developed to give quantitative field determinations of the uranium, thorium and potassium content of rocks.


#### Abstract

The foregoing are only brief sketches of the subjects covered. Further condensed information is supplied by Geology and Economic Minerals of Canada (including Map 1045A) and Prospecting in Canada; the latter also contains chapters on the principles of geology and on minerals and rocks. The Geolooical Map of Canada (1045A, 50 cents) and Canada, Principal Mining Area ( 900 A ) are also recommended. Map 900 A is revised annually; one copy is sent free to residents of Canada and additional copies are 25 cents each. These publications can be ordered from the Director, Geological Survey of Canada, Ottawa, together with lists of reports and maps of the Geological Survey of Canada on specific topics and areas, for each province. Other publications are available from provincial mines departments.


## Section 3.-Federal Government Surveying and Mapping*

The needs for maps and surveys of Canada are met mainly by the Department of Energy, Mines and Resources. Although not all Branches of this Department make surveys and compile maps, many of them are involved in such work either wholly or partly. They compile topographical, geological and aeromagnetic maps, aeronautical and hydrographic charts, as well as specialized maps showing electoral district boundaries, land use and other features. In carrying out these tasks, the Department is guided partly by long-range plans based on general national needs and partly by requests from private enterprise and other government agencies. Some types of maps and surveys are also produced by provincial and private agencies and, to avoid duplication, the Department co-ordinates its work with these bodies. Other types-such as hydrographic and aeronautical chartg-are produced exclusively by the Department.

The staff of the Department numbers about 4,000, of whom 1,000 are scientists and engineers and 1,300 are technicians. Each year, some 1,500 men are sent into the field to make surveys and to carry out research. Of the various Branches and Divisions, the following are particularly concerned with surveying and mapping: Surveys and Mapping Branch (geodetic and topographic surveys, electoral maps, aeronautical charts); Marine Sciences Branch (hydrographic charts of seacoasts and inland navigable waters); Geological Survey of Canada (geological features); Observatories Branch (geophysical maps); and Geographical Branch (land-use, land-form and other special maps).

Types of Surveys.-In the field of geodesy, the Geodetic Survey maintains and extends a network of horizontal and vertical control points across Canada. At present, most of the extension work is in the northern parts of the country, while in the south greater density and the closing of gaps are the main tasks. The ultimate aim is to have horizontal and vertical control points no farther apart than 20 miles. The Topographical Survey is proceeding with the establishment of control points at smaller intervals and the mapping of the country at the most popular scales- $1: 25,000,1: 50,000$ and $1: 250,000$. Complete coverage of Canada at $1: 250,000$, or about four miles to the inch, is expected by 1967; of the 925 maps required for this purpose, more than 800 were completed by early 1966. Of particular interest in both geodetic and topographical surveying is the establishment of monumented control points in and around municipalities, a long-neglected and urgently needed task.

The Department also carries out legal or property surveys on Crown Iands, such as the two northern Territories, the National Parks and Indian reserves; it participates in the

[^9]survey and demarcation of interprovincial and territorial boundaries; is responsible for the preparation of descriptions and diagrams of federal electoral districts; and is the sole agency in Canada for the preparation of aeronautical charts showing airports, airways, and radio and other aids necessary for air navigation. Much of the work in the latter type of mapping arises from the need to keep up with the flow of new aeronautical information and to present it in a form that may be easily interpreted by the pilot. As a service to map-makers and others interested in that field, the Department maintains the National Air Photo Library, a collection of all air photographs taken by or for the Federal Government.

Hydrographic and oceanographic surveys are carried out from the Department's fleet of ships and launches in the seas bordering Canada and in inland lakes and rivers. The Bedford Institute of Oceanography at Dartmouth, N.S., is the base for operations on the Atlantic Coast and in the Eastern Arctic, and the Pacific base is at Victoria, B.C. The final compilation of the marine charts is done at Ottawa.

Geological surveys are carried out mainly to provide an inventory of the potential mineral resources of Canada, to aid in the discovery of mineral deposits, and to help in other aspects of the national economy influenced by geological factors. Each year approximately 100 parties are placed in the field, about half of whom are engaged in reconnaissance mapping. The first systematic reconnaissance of the geology of Canada is approaching completion and attention is being increasingly given to more fundamental research. Both the Geological Survey and the Observatories Branch carry out geophysical surveys, resulting in maps showing such features as variations in terrestrial magnetism, gravity and seismicity. The geophysicists of the Geological Survey are interested mainly in outlining geological features and those of the Observatories aim at a better over-all knowledge of the earth. A network of 22 first-order seismic stations is maintained across Canada and earthquake-probability maps are published.

The Geographical Branch produces special maps showing actual land use-an important aid in economic planning; it surveys and maps land forms in the Arctic, where ice formation produces surface dislocations found in few other areas; and also acts as the executive arm of the Canadian Permanent Committee on Geographical Names.

In the drafting and printing of the maps, highly advanced techniques for the automatic transfer of terrain features from air photos to drafting sheets and precise lithographing have been combined to assure speedy processing of field data and the production of colourful, easily understood and relatively inexpensive maps for every type of user, from vacationer to town planner and from prospector to pilot. The Department operates a large modern plant to print the maps compiled by its several Branches as well as maps compiled by other government departments and agencies. The Surveys and Mapping Branch has a stock of almost $12,000,000$ maps from which it distributes more than $1,000,000$ annually. Each year the Geological Survey distributes about 350,000 maps and reports, the Marine Sciences Branch distributes about 250,000 charts, and other Branches distribute large numbers of their own maps and charts.

## PART II.-PUBLIC LANDS, WILDLIFE AND FLORA*

## Section 1.-Federal and Provincial Public Lands

In Table 1 classifying the area of Canada by tenure, items 2, 3, 4 and 5 are obtained from Federal Government sources and items 1, 6, 7 and 8 from provincial government sources.

[^10]
## 1.-Total Area classilied by Tenure (circa) 1965

| Item | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | aq. miles | Bq, milea | 8q. miles | sq. miles | sq. miles | sq. miles |
| 1. Privately owned land or land in process of alienation from the Crown. | 6,803 | 2,054 | 16.107 | 15,510 | 43,500 | 45,659 |
| 2. Federal lands other than leased lands, National Parks, Indian reserves and forest experiment ststions. | 163 | 70 | 132 | 601 | 4161 | 1,113 |
| 3. National Parks. | 153 | 7 | 517 | 79 | : | 12 |
| 4. Indian reserves | - | 4 | 40 | 59 | 294 | 2,406 |
| 5. Federal forest experiment stations | - | - | - | 35 | 7 | 41 |
| 6. Provincial lands other than Provincial Parks and provincial forest reserves. | 148,871 | 42 | 4,618 | 10,659 | 491,084 | 357,4983 |
| 7. Provincial Parks | 78 | 1 | 11 | 4 | 53,081 | 3.853 |
| 8. Provincial forest reserves | 117 | 6 | - | 1,407 | 6,478 | 4 |
| Totals | 156,185 | 2,184 | 21,425 | 28,354 | 534,860 | 412,588 |
|  | Man. | Sask. | Alta. | B.C. | $\begin{aligned} & \text { Yukon } \\ & \text { N.W.T. } \end{aligned}$ | Canads |
|  | sq. miles | aq. miles | sq. miles | sq. miles | sq. miles | sq. milen |
| 1. Privately owned land or land in process of alienation from the Crown. | 63,318 | 304,887 | 88,149 | 19,901 | 85 | 406,063 |
| 2. Federal lands other than leased lands, National Parks, Indian reserves and forest experiment stations. | 1,113 | 4,972 | 2,842 | 502 | 1,508,2464 | 1,520,170 |
| 3. National Parks. | 1,148 | 1,496 | 20,717 5 | 1,671 | 3,625* | 29,425 |
| 4. Indian reserves. | 816 | 1,913 | 2,541 | 1,282 | 11 | 9,366 |
| 5. Federal forest experiment stations | $25^{2}$ | - | 23 | - | 12 | 143 |
| 6. Provincial lands other than Provincial Parks and provincial forest reserves | 188,281 | 16,681 | 119,427 | 285,781 | - | 1,622,952 |
| 7. Provincial Parks | 2,854 | 1,803 | 2,318 | 10,018 | - | 76,022 |
| 8. Provincial forest reserves. | 5,4158 | 119,948 | 9,267 | 47,000 | $\cdots$ | 189,688 |
| Totals | 251,000 ${ }^{9}$ | 251,704 | 255,285 | 36t, 255 | 1,511,979 | 3,851,869 |

${ }^{1}$ Includes Gatineau Park ( 97 sq , miles) and Quebec Battlefields Park ( 0.36 sq. mile) which are under federal jurisdiction but are not technically National Parks. ${ }^{2}$ Less than one square mile. ${ }^{3}$ Sect. 46 of the Crown Timber Aet which authorized Provipcial Forest Reserves was repealed Mar. 25, 1964; all such lands are included in item 6 . 'Includes 952,849 sq. miles set aside by Order in Cotncil as native game preserves in which only Indians and Eskimos may hunt, but which are not regarded as National Parks. ${ }^{\text {S }}$ Ineludes that part of Wood Bufalo Park in Alberta ( 13,675 sq. miles); tbis park, althongh establisbed under the National Parka Act, is administered by the Department of Indian Affairs and Northern Development. ©That part of Wood Buffalo Park in N.W.T. ${ }^{7}$ This forest erperiment area of 25 sq . miles is also included in National Parks figure. ${ }^{8}$ Includes $1,945 \mathrm{sq}$, miles of provincisl park land within provincial forest reserves.
add because of duplications; see footnotes concerned.
Federal Public Lands.-Public lands under the administration of the Federal Government comprise lands in the Northwest Territories including the Arctic Archipelago and the islands in Hudson Strait, Hudson Bay and James Bay, lands in Yukon Territory, ordnance and admiralty lands, National Parks and National Historic Parks and Sites, forest experiment stations, experimental farms, Indian reserves and, in general, all public lands held by the several departments of the Federal Government for various purposes connected with federal administration (see Table 1). These lands are administered under
the Territorial Lands Act (RSC 1952, c. 263) and the Public Lands Grants Act (RSC 1952, c. 224) which became effective June 1, 1950 and replaced previous legislation.

The largest areas under federal jurisdiction are in the Northwest Territories and Yukon Territory where only 85 sq. miles of a total area of $1,511,979 \mathrm{sq}$. miles are privately owned. This part of the national domain, with the exception of the islands in Hudson Bay and James Bay, is all north of the 60th parallel of latitude and occupies about 40 p.c. of the surface of Canada. It is under the administration of the Department of Indian Affairs and Northern Development.

Provincial Public Lands.-Public lands of Nova Scotia, New Brunswick, Quebec, Ontario and British Columbia (except the Railway Belt and Peace River Block) have been administered since Confederation by the provincial governments. In 1930 the Federal Government transferred the unalienated portions of the natural resources of Manitoba, Saskatehewan and Alberta and of sections of British Columbia to the respective governments, and all unalienated lands in the Province of Newfoundland, except those administered by the Federal Government, became provincial public lands under the Terms of Union on Mar. 31, 1949. All land in the Province of Prince Edward Island has been alienated except 130 sq . miles under federal or provincial administration.

Information regarding provincial public lands may be obtained from the respective provinces. (See the Directory of Sources of Official Information, Chapter XXVII, under "Lands and Land Settlement".)

## Subsection 1.-National Parks

Canada's National Parks are the result of the Federal Government's efforts to preserve natural areas of outstanding scenic and biological interest for the benefit of the public. The national park concept, which began with the establishment of Yellowstone National Park in the United States in 1872, was soon afterwards applied in Canada. In 1885, the Canadian Government reserved from private ownership the hot mineral springs of Sulphur Mountain in what is now Banf National Park. Two years later, this 10 -sq. mile reserve was extended to 200 sq . miles and named Rocky Mountain Park, the first federal park in Canada. In the same year, Queen Victoria Niagara Falls Park, the first provincial park, was established by the Ontario Government to protect the public's right to view the great natural wonder of Niagara Falls. Two land reserves in southern British ColumbiaYoho and Glacier-were established by the Federal Government in 1886, a reserve in the Waterton Lakes area of southern Alberta in 1895, and an area of $4,200 \mathrm{sq}$. miles around Jasper, Alberta, in 1907. These four reserves, all in the western mountain ranges, joined Banff as the nucleus of the National Park system when the Dominion Forest Reserves and Parks Act was passed by Parliament in 1911. The Act also provided for a distinct National Parks Branch in the Federal Government to protect, administer and develop the parks.

By 1935, nine more National Parks had been established. Three of these were in Ontario and consisted of federally owned Crown land; one in Saskatchewan and one in Manitoba were former forest reserves; Wood Buffalo National Park, straddling the AlbertaNortbwest Territories border and occupying an area of $17,300 \mathrm{sq}$. miles, making it the largest national park in the world, was established as a refuge for the largest surviving herd of buffalo in North America; Elk Island National Park near Edmonton was also established as a preserve for buffalo; and Mount Revelstoke and Kootenay National Parks, scenic areas in southern British Columbia, were established by agreement between the Federal and British Columbia Governments.

The parks added to the system since 1935 were set up with the co-operation of provincial governments which made lands available for National Park purposes. All lands suitable for National Parks are now under the administration of provincial and territorial
governments and a new National Park may be established by Act of Parliament only after the land for it has been acquired by the provincial government and transferred, together with all its mineral and other resource rights, to the administration of the Federal Government.

National Parks are now under the jurisdiction of the Minister of Indian Affairs and Northern Development and the Natural and Historic Resources Branch and are administered under the National Parks Act enacted in 1930 (RSC 1952, e. 189) and various park regulations. The purpose of the parks and the objectives of their management are set out in that Act, which dedicates the parks to the people of Canada for their "bepefit, education and enjoyment" and instructs that they are to be maintained and used 80 as to leave them unimpaired for the enjoyment of future generations.

An important step in the evolution of National Park administration was taken when all policies regarding the parks were reviewed and consolidated in a statement that was approved by the Government and announced in the House of Commons on Sept. 18, 1964. The main points of this policy statement, which will guide administration and provide objectives for planning and development, are:-
(1) National Parks are established to preserve for all time the most outstanding and unique natural features of Canada for the benefit, education and enjoyment of Canadians as part of their natural heritage. They are dedicated iorever to one use-to serve as sanctuaries of nature for rest, relaxation and enjoyment. No exploitation of resources for any otber purpose is permitted. All development must contribute to public enjoyment and conservar tion of the parks in a natural condition.
(2) Zoning will be used to guide development and to preserve park values. Visitor services will be grouped generally to visitor service centres, a definition that applies to existing townsites.
(3) National Parks cannot meet every recreational need; the most appropriate uses are those involving enjoyment of nature and activities and experiences related to the natural scene.
(4) The Federal Government assumes the cost of administration and protection in the parks and provides basic facilities for public use, such as roads, trails, campgrounds, picnic areas, nature interpretation and utilities. Other facilities beyond basic requirements, such as hotels, motels, restaurants, gas stations, stores and other special services, are provided by private entergrise.
(5) Park residents and businesses should be in the same economic position as those operating outside the National Parks and this principle governs the approach to charges, rentals and fens. The users of special services such as swimming pools, marinas, golf courses and fully serviced campgrounds should pay the operation and maintenance costs of these publicly operated facilities. In general, permanent and seasonal residents should be limited to persons providing basic services to park visitors and to the park community.
(6) All decisions affecting public development and the activities of private enterprise muat be governed by the national interest as expressed by the National Parks Act.

In addition to the National Parks, which preserve natural features, National Historic Parks and Sites preserve and identify the places important in the history of Canada. The National Historic Parks are military or fur-trading forts that have been preserved, or historic buildings or reconstructions of historic buildings and most of them have museums associated with them. Hundreds of monuments or plaques commemorating personages or events bave been erected across the country. A site is declared of national historical significance on the recommendation of the Historie Sites and Monuments Board of Canada, an advisory board of historians representing all provinces.

The National Parks and National Historic Parks and Sites are administered by a director and three regional directors who are responsible for operations in the Western Region, the Central Region (Ontario and Quebec) and the Atlantic Region. Each director is advised by representatives of the five staff divisions of the Branch-Financial and Management, National Parks Service, Canadian Historic Sites, Engineering and Architectural, and Planning. A resident superintendent manages each park and directs a staff of park wardens who protect the park and its natural features and enforce park regulations, park naturalists who explain the park to visitors and offer various educational services, and other administrative, maintenance and visitor service personnel.

Each park is being developed to yield the recreational potential for which it is suited and sightseeing, camping, fishing, photography, hiking and nature study are the most popular recreations common to the 18 parks that are accessible to the public. There are campgrounds in each park; a daily charge is made for the use of those equipped with complete services but there is no charge for the use of other campgrounds. A vehicle admission fee, varying from 25 cents for a single entry to $\$ 2$ for an annual licence good for all parks, is payable on entering all parks in Western Canada and Point Pelee National Park in Ontario; there is no charge for motor vehicles entering parks in the Atlantic Provinces.
2.-Lrocation, Year Established, Area and Characteristics of National Parks and of National Historic Parks and sites

| Park | Location | Year Established | Area | Characteristics |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  | sq. miles |  |
| National Parics |  |  |  |  |
| Terra Nova............ | On Bonavista Bay, Newfoundland, 205 miles north of St. John's. | 1957 | 153.0 | Rocky hesdlands, wooded interior areas, off-shore and freshwater fishing. Serviced campground and cabin accommodation. |
| Prince Edward Island.. | North sbore of Prince Edward Island. | 1937 | 7.0 | Strip 25 miles long on shores of the Gulf of St. Lawrence. Fine bathing beaches. Hotel and cabin accommodation. Serv* iced campgrounds. |
| Cape Breton Highlands. | Northem part of Cape Breton Island, N.S. | 1936 | 367.0 | Rugged Atlantic coastline with mountainous background. Fine aeascapes. Hote! and cabin accommodation. Serviced estopgrounds. |
| Kejimkujik............. | Interior of oouthwestern Novg Scotia near Maitland Bridge. | 1 | 150.0 | Newest National Park still at early stage of development. |
| Fundy | On Bay of Fundy between Moncton and Saint John in New Brunswick. | 1948 | 79.5 | Interesting rock formations on coast and rolling bills inland. Motel and cabin accommodation and campgrounds. |
| Georgian Bry Islands.. | In Georgian Bay, 3 miles by water from Honey Harbour, Ont. | 1929 | 5.4 | Camping, canoeing, hiking, swimming, fishing and boating opportunities. Unusual geological formations on Flowerpot Istand, off Tobermory on Midland Peninsula. Accessible by boat only. |
| Point Pelee ............ | On Lake Erie near Leamington, in southwestern Ontario. | 1918 | 6.0 | Most southerly part of Canadian mainland. Fine bathing beaches. Unusual flora. Resting place for migrating birdg. Campground. |
| St. Lawrence Lelands... | In St. Lawrence River between Brockville and Kingston, Ont. | 1914 | $\begin{gathered} 2 f 0.0 \\ \left(\operatorname{acreses}^{2}\right) \end{gathered}$ | Mainland area and 14 islands with docks, campgrounds and pienic areas. Replesentative selection of the Thousand Islands. Islands accessible by boat only. |
| Riding Mountain....... | Southwestern Manitobs, west of Lake Winnipeg. | 1929 | 1,148.0 | Woodland escarpment with fine lakes. Fishing, swimming, trail-riding, hiking and golfing. Visitor services in Wafagaming townsite. Campgrounds. |
| Prince Albert. | Central Saskatchewan, north of Prince Albert. | 1927 | 1,498.0 | Forested region dotted with lakes and interlaced with streams. Fishing, swimming, boating snd golfing. Marina. Visitor services at Waskesju townsite. |
| Banff.................. | Western Alberta, on east elope of Rockies, 65 miles from Calgary. | 1885 | 2,584.0 | Best known and most popular of the National Parks. Magnificent scenery. Mineral hot springs. Resort facilities at Banff and Lake Louise. Skiing developments at Mount Norquay, Mount Whitehorn, Sunshine, Skoki sud Temple. On Trans-Canada Highway. |

## 2.-Location, Year Established, Area and Characteristics of National Parks and of National Historic Parks and Sites-continued

| Park | Location | Year Establisbed | Area | Charscteristics |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  | 99. miles |  |
| National Parks concluded |  |  |  |  |
| Elk Imland. | Central Alberta, near Edmonton. | 1913 | 75.0 | Fenced preserve containing Large herd of buffalo; also deer, elk and moose. Popular picnic and day-use area. Cabin accommodation and serviced campground. |
| Jasper.... | Western Alberta, on east slope of Rockies, 235 miles from Edmonton. | 1907 | 4, 200.0 | Mountsinous area and noted wildlife santtuary. Majestic peaks, icefields, beantiiul lakes and famous resort, Jasper. Mineral bot springs. Connected with Banff by scenic Banff-fasper Highway. Accessible also by rail. Hotel and cabin accommodation and campgrounds. |
| Waterton Lakes., | Southern Alberta, sdjoining Glacier Park in Montana, U.S.A. | 1895 | 203.0 | Canadian section, Waterton-Glacier International Peace Park. Mountainous area with spectacular parks and beautiful lakes. Hotel. motel and cabin accommodation. Serviced and unserviced campgrounds. |
| Glacier. | Southeastern British Columbia, on summit of the Selkirk Range. | 1886 | 521.0 | Superb alpine recion, towering peaks, glaciers and toreste. Climbing, hiking and camping. On Trans-Canada Highway. Visitor services at Rogers Pass. |
| Kootenay. | Southeastern British Columbia, on west slope of Rockies. | 1920 | 543.0 | Includes Vermilion-Sinclair section of Banff-Windermere Highway. Broad valleys, deep canyons, mineral hot springs. Hotel and eabin accommodstion. Serviced and ungerviced campgrounds. |
| Mount Revelatoke. .... | Southeastern British Columbia, on west slope of Selkirks. | 1914 | 100.0 | Mountain-top plateau with rolling alpine meadow sid picturesque tarns. |
| Yoho.................. | Eastern British Columbia, on west slope of Rockies. | 1886 | 507.0 | Lofty peaks, magnificent waterfalls, colouriul lakes. Yoho and Kicking Horse Valleys. Hotel and cabin accommodation. Serviced and unserviced campgrounds. |
| Wood Buffisle.......... | Partly in Alberta, and partly in NorthwestTerritories, between Athabasca and Slave Rivers. | 1922 | 17,300.0 | Largest National Park in world. Home of largest remaining herds of plaing and wood bison and nesting ground of whooping crane. Accommodation at and access by boat and aircrait from Fort Smith, N.W.T. |
| National Historie Parks |  |  | acres |  |
| Signal Hill | St, John's, Nfld............ | 1958 | 243.4 | Site of 1782 battle between French and British and of many fortifications. Marconi made first transatlantic wireless transmission bere in 1901. |
| Fort Amherat.......... | Prince Edward Ialand. near Rocky Point. | 1 | 222.0 | Remaining eartbworks of British fort built aiter 1758. |
| Fort Anne............. | A.nnapolis Royal, N.S..... | 1917 | 31.0 | Site of French fort first built about 1635. finally captared and occupied by British in 1710. Museum and well-preserved earthworks. |
| Fortress of Louisbourg. | Cape Breton Island, N.S., 25 miles from Sydney. | 1940 | 13,000.0 | Walled town bnilt by French 1713-58 and demalished by British 1759. Being partially reconstructed. Archaroological investigations in progress. |

1 Not yet formally eatabliahed.

## 2.-Location, Year Established, Area and Characteristics of National Parks and of National

 Historic Parks and Sites-continued| Park | Location | Year Established | Ares | Cbarscteristics |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  | acres |  |
| National Historic Parks-concluded |  |  |  |  |
| Halifax Citadel... | Halifax, N.S.............. | 1951 | 20.0 | Fortress constructed in 1820s and in 1850s. Museum. |
| Port Royal. | Port, Royal, N.S., 8 miles from Annapolis Roynl. | 1940 | 20.5 | Reconstruction of "Habitation"--Girst fort built in 1605 by Champlain and DeMonts. |
| Alexander Grabam Bell. | Baddeck, N.S............. | 1 | 21.0 | Museum containing mechanical and documentary records of research by the inventor. |
| Grand Pré | Grand Pré, N.S. | 1957 | 20.0 | Commemorates the story of the Acsdisus and the New England Planters. Museum. |
| Fort Beanséjour........ | New Brunewick, near Sackville. | 1926 | 93.0 | Site of French fort erected in mid-1700s. Museum. |
| Fort Chamb | Chambly, Que. | 1840 | 2.5 | Fort built by English in 1709-11. Museum. |
| Fort Lennox. | tle mox Noix, Que., near St. Paul. | 1940 | 210.0 | Fort built by English in 1820e. |
| Fort Malden. | Amberstburg, Ont. . | 1940 | 10.0 | Site of defence post built in 1797.99. Museums. |
| Fort Wellington. | Prescott, Ont | 1940 | 12.0 | Military garrison 3812-66. |
| Woodside. | Kitchener, Ont. | 1954 | 12.0 | Boyhood home of the Rt. Hon. William Lyon Mackenzie King, former Prime Minister of Canada. |
| Fort Prince of Waleg... | Nerthern Manitoba, near Churchill. | 1940 | 50.0 | Ruins of fort built 1733-7! to secure control of Hudson Bay for England, |
| Lower Fort Garry..... | Manitoba, 20 miles north of Winnipeg. | 1951 | 13.0 | Stone-walled fort built by the Hudson's Bay Company between 1831 and 1839. |
| Fort Battletord........ | Saskatchewan, 4 miles south of North Battleford. | 1951 | 38.7 | North West Mounted Police post built in 1876. Museum. |
| Fort Langley.......... | Fort Langley, B.C........ | 1 | 11.0 | Partially restored trading post founded 1827. Colony of British Columbia proclaimed here 1858. |
| Fort Rodd Hill........ | Esquimalt, B.C........... | 1962 | 44.4 | Extensive 19th century stone and concrets coastal Iortificationa. |
| Major National Historic Bites |  |  |  |  |
| Gearge Island. | Halifax, N.S. | 1 | 12.5 | Preserved harbour fortifications built in 1870 . |
| York Redoubt. | Halifar, N.S. | 1 | 187.5 | Perimeter Harbour Defence 1778-1945. |
| Fort Gaspereau | Near Port Elgin, | 1 | 2.0 | Site of 1751 French Fort. |
| St. Andrewa Blockhouse | St. Andrews, N.B........ | 1938 | 2.5 | Built during War of 1812. |
| Martello Tower. | Lancaster, N,B........... | 1924 | 0.8 | Harbour defence built during War of 1812. |
| Sir Wilfid Laurier's Birthplace. . | St. Lin. Que............... | 1941 | 0.5 | Period restoration relating to early life of a famous Prime Minister. |
| Cartier-Brébeuf Park.. | Quebec, Que............. | 1 | 5.0 | Park, possible wintering site of Jacques Cartier, 1585-36. |

[^11]
## 2.-Location, Year Established, Area and Characteristics of National Parks and of National Historic Parks and Sites-concluded

| Park | Location | Year <br> Estab- <br> lished | Area | Characteristics |
| :---: | :---: | :---: | :---: | :---: |
| Major National Historic Bltesconcluded |  |  | acres |  |
| Old walls around City of Quebec. | Quebec, Que.............. |  | $\cdots$ | Former Quebee City fortifiestions. |
| Fort Coteal. | Coteau du Lac, Que....... | 1 | 9.5 | Site of fort built in 1779. |
| Bellevte................ | Kingston, Ont............. | 1964 | 1.2 | House lived in by Sir John A. Macdonald about 1848. |
| Fort St. Joseph......... | St. Joseph's Island near Sault Ste. Marie, Ont. | 1 | 47.0 | Most westerly British fort, built in 1798. |
| Batoche Rectory....... | Near Duck Lake, Sask. . . | 1954 | 7.0 | On field of final battle of Northweet Rebel1ion, 1885. Only surviving building of that date. |
| Fish Creek Memorial | Near Rosthern, Sask...... |  | 39.0 | Commemorate Northwent Rebellion battle of 1885. |
| Palace Gravd Theatre. | Dawson, Y.T............. | 1959 | $\cdots$ | Reconstruction of thestre of Gold Rush days. |
| 3.S. Keno. | Dawson, Y.T............ | 1959 | -- | Preserved Yakon river-boat. |
| Yukon Sternwheeler... | Whitehorse, Y.T.......... | 1959 | -- | Yukon river-bogt af 1030 period. |

1 Not yet formally eatabliabed.
Evidence of the increasing attraction of Canada's National Parks and National Historic Parks and Sites is the growing numbers of visitors as shown in Table 3.
2.-Visitors to National Parks and National Historic Parks and Sites, Years Ended Mar. 31, 1963-56

g.-Visitors to National Parks and National Historie Parks and Sites, Years Ended Mar. 31, 1963-66-concluded

| Park | 1963 | 1964 | 1965 | 1966 |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. |
| National Historic Pariss and Sites |  |  |  |  |
| Signal Hill. | 238,538 | 195,208 | 241,242 | 275,209 |
| Fort Amberst. | 1,764 | 3,851 | 9,513 | 22,576 |
| Fort Anne. ${ }^{\text {a }}$. | 83,103 | 77, 201 | 64,551 | 66,534 |
| Fortress of Louisbourg | 32,347 | 40,153 | 113,148 | 148,072 |
| Halifar Citadel. | 243,609 | 192,286 | 213,212 | 213,878 |
| Port Royai Habitation | 31,579 | 35,947 | 39,265 | 42,699 |
| Alexander Grabam Bell | 79,659 | 91,392 | 106,228 | 110.158 |
| Grand Pré. | 47,871 | 63, 895 | 64,194 | 62,848 |
| Fort Beausejour | 51,454 | 43,346 | 49,427 | 49.087 |
| Martello Tower. |  |  | 38,893 | 40.993 |
| Fort Chambly. | 71,053 | 85.569 | 91,493 | 101,286 |
| Fort Lennox. . | 24,959 | 27,943 | 20, 423 | 26, 191 |
| Sir Wilfrid Laurier's Birtaplace. | 8,186 | 7,592 | 7,180 | 7,562 |
| Fort Malden. | 42,254 | 41,023 | 38,916 | 52,670 |
| Fort Wellington. | 46,666 | 51,530 | 52,167 | 40,917 |
| Woodside..... | 10,738 | 12,564 | 11,699 | 13,554 |
| Fort Prince of Wales. | 362 | 258 | 424 | 311 |
| Lower Fort Garty | 59,544 | 85,391 | 86.620 | 92,208 |
| Fort Battleford. | 30,895 | 34,807 | 38.825 | 42,878 |
| Batoche Rectory | 15,350 | 7,069 | 7,855 | 8,869 |
| Fort Langley. | 98,560 | 105,139 | 16,723 | 111,941 |
| Fort Rodd Hill. | 42,583 | 39,759 | 32,922 | 38,614 |
| Palace Grand Theatre. |  |  |  | 5,525 |
| S.S. Keno.. |  |  |  | 6,857 |
| Totals, National Historic Parks and Sites.. | 1,261,024 | 1,241,481 | 1,444,930 | 1,579,437 |
| Grand Totals | 8,687,42\% | 14,688,278 | 10,623,958 | 11, 224,724 |

[^12]
## Subsection 2.-Provincial Parks

Most of the provincial governments of Canada have established parks within their boundaries. Some of these, particularly in Quebec and Ontario, are wilderness areas set aside in order that some portions of the country might be retained in their natural state without change brought about by the hand of man. Most of them, however, are smaller areas of exceptional scenic or other interest which are easily accessible and are equipped or slated for future development as recreational parks with camping and picnic facilities. The more important parks in each province are mentioned briefly in the following paragraphs.

Newfoundland.-There are 78.5 sq. miles of provincial parkland reservations in Newfoundland. Of the total area, 26 sq. miles are at present utilized for public recreation and the remaining 52.5 sq . miles are as yet undeveloped. The active parkland consists of three regional parks, each having an area of about 8 sq . miles, and 18 roadside parks with camping and picnicking facilities, each having an area of about 100 acres.

In early 1966 arrangements were made under the federal Agricultural and Rural Development Act (ARDA) program to establish 12 more provincial parks in Newfoundland within the next two years. The parks will be located in various sections of the province and each will contain 25 camping areas, 25 picnic areas and swimming facilities, with associated roads, trails, clearinge and bridges as required.

Prince Edward Island.-Twenty areas totalling 900 acres have been developed as provincial parks: Strathgartney Park, a 40-acre tract of land at Churchill on the TransCanada Highway between Charlottetown and Borden, is an excellent picnic site and
camping ground with its hardwood groves, fresh spring water and beautiful view over West River and the surrounding country; Lord Selkirk Park, an area of 30 acres at Eldon, is of historic interest in that it contains an old French cemetery and marks the spot on the shoreline where Lord Selkirk landed; Brudenell River Park, comprising 80 acres at Roseneath, has a considerable area of woodland and runs to the shore of the Brudenell River; Jacques Cartier Park, an area of 13 acres at Kildare Beach four miles from Alberton, is of historic significance as the place where Jacques Cartier first landed on Prince Edward Island; Green Park, 27 acres on the Trout River, is an attractive combination of land, trees and water and is also of interest as a historic shipbuilding centre; and Cabot Park at Malpeque, named in honour of the famous explorer, John Cabot, is a 16-acre area with beautiful sandy beaches and an interesting museum. Several small parks have been developed or are under development. The parks are maintained by the Department of Tourist Development. A fee of $\$ 1$ a night is charged for trailer space and of 75 cents a night for tent space in all provincial parks.

Nova Scotia.-Steady progress is being made in eatablishing a provincial park system in Nova Scotia, having the ultimate goal of providing facilities at some 15 to 20 camping-pienic parks and some 40 to 60 picnic parks. During the summer season of 1966 there were in operation 10 camping-picnic parks, 35 picnic parks and 12 roadside table sites. Five additional camping-picnic parks were under development and suitable sites were being acquired for more picnic parks.

Provincial financial assistance is available to municipalities for the development of local parks which might serve as adjuncts to the provincial park system. An inventory of the recreational resources of the province is being conducted under the Canada Land Inventory program. This includes a survey of the coast line, one of the results of which will be consideration of the acquisition of good public beaches.

New Brunswick.-The Department of Lands and Mines is responsible for the development of the provincial park system, which includes 15 regional park sites ranging in size from 25 to 200 acres, 19 picnic campsites and 30 roadside pienic sites. All pienic and camping grounds contain tables, some form of toilet facility and a potable water supply but more elaborate facilities are available in the larger parks. Most sites are adjacent to or easily accessible from main trunk roads. No entrance fee is charged at any of the sites, but a daily camping fee of $\$ 1.00$ to $\$ 1.50$ is in effect at 16 of the larger parks and campsites.

The total number of visitors to provincial parks in 1965 exceeded $1,000,000$, campers numbering 113,$000 ; 75$ p.c. of the campers using park sites come from outside the province and about 40 p.c. of the day-use visitors are non-residents. Most of the park sites are located in rural areas, fairly evenly distributed throughout the province. A five-year ARDA program of expansion and improvement of park and campground facilities is being undertaken, which will include the development of approximately 1,000 tent and trailer sites, accommodation for day-use of beaches, forest and wildife recreation areas, scenic lookouts, etc., land purchase and provision of special facilities where warranted by intensity of use, such as boats, ramps, docks, canteens and playgrounds.

The Department maintains a Game Farm at Magnetic Hill near Moncton where various species of wildife to be found in the province are displayed.

Quebec.-The Province of Quebec has established six provincial parks and 12 fish and game reserves. Four of the park areas are quite extensive. La Vérendrye Park, 140 miles northwest of Montreal, has an area of $4,953 \mathrm{sq}$. miles; Laurentide Park, 30 miles north of Quebec City, is 3,613 sq. miles in extent; Mont Tremblant Park, 80 miles north of Montreal, 920 sq. miles; and Gaspesian Park, in the Gaspe Peninsula, 514 sq. miles. Mont Orford Park, situated 15 miles west of Sherbrooke, has an area of 16 sq . miles and Oka Provincial Park near Oka, 1.5 sq. miles.

Fish and Game Reserves together occupy over 43,000 sq. miles. The Chibougamau Reserve, the Mistassini Reserve and the Assinica Reserve, all northweat of Lake St. John,
have areas of $3,400,5,200$ and $3,850 \mathrm{sq}$. miles, respectively, and farther north is the James Bay Reserve with an area of 25,000 sq. miles. The Aiguebelle Reserve in Abitibi County has an area of 100 sq . miles, the Baie Comeau and Chicoutimi Reserves in the Lake St. John area, 480 and 678 sq. miles, respectively, and the Kipawa Reserve in Témiscamingue County, 3,090 sq. miles. Adjoining Gaspesian Park are the Chic-Chocs and Matane Reserves with areas of 325 sq. miles and 500 sq. miles, respectively, and in Rimouski County is the Horton Reserve with an area of 310 sq . miles; the latter is the only Reserve operated for hunting as well as fishing. Excellent salmon fishing is available in the Gaspe area where the government maintains facilities for anglers along the Port Daniel, St. Jean and Petite Cascapédia Rivers. Facilities are also provided along the estuary of the Moisie River on the north shore of the St. Lawrence River about 15 mules east of Sept Iles.

These parks and reserves are wilderness areas of great scenic interest and are for the most part mountainous country threaded with many rivers, lakes and streams and abounding in wildlife. In all of them, except Mont Orford Park and Oka Provincial Park, excellent fishing may be found and most of them have been organized to accommodate sportsmen and tourists in camps, cottages and lodges. Mont Tremblant Park, located close to a famous year-round recreational area, is easily reached in summer by highway from Montreal and is very popular for tent or trailer camping and for swimming and pienicking. Mont Orford has an 18 -hole golf course and, in winter, is the rendezvous of Cauadian and United States skiers and the site of the Canadian Alpine downhill and slalom championship competitions. Hunting is forbidden in the parks and reserves, except Horton, Jofire, Kipawa and James Bay. In recent years, controlled moose hunting in Laurentide, La Vérendrye and Matane Parks has been allowed to remove the surplus population.

The ever-increasing popularity of camping in Quebec has prompted the Department's Park Service to establish camping facilities. Four areas are now well organized for this purpose-Val Jalbert, one mile east of Roberval in Lake St. John County; Grand Métis, six miles from Mont Joli and Cap Bon Ami, both in the Gaspe Peninsula; and Batiscan on Highway 2, 25 miles east of Trois-Rivières. To expand this program, the Department has purchased the St. Maurice Reserve, a 131-sq. mile area north of Shawinigan in Champlain County.

Ontario.-The development of provincial parklands in Ontario continues at a rapid rate. In 1954 there were only eight provincial parks in the province while today there are 92 such parks available for public us?. In addition, several new parks are in process of development and 54 other areas encompassing almost 800 sq . miles are reserved for future development. The total area in the Ontario Provincial Park system is about $5,850 \mathrm{sq}$. miles.

The four largest provincial parks-Algonquin, Quetico, Lake Superior and Sibleytogether have an area of about $5,200 \mathrm{sq}$. miles. Algonquin Park, the largest in the system, is a beautiful area $2,910 \mathrm{sq}$. miles in extent 180 miles north of Toronto and 105 miles west of Ottawa; it has $1 t$ picnic and campgrounds which are accessible by car from Highway 60 and offers particularly fine canoeing opportunities within its interior. Quetico Park covering 1,750 sq. miles, is accessible by Highway 11 at the Dawson Trail Campground on French Lake and also by water via Basswood Lake in the south. Highway 17 north from Sault Ste. Marie provides access to Lake Superior Park, and Sibley Park may be reached by road from Highway 17 east from Port Arthur.

Under the Wilderness Areas Act, which came into effect in 1959, 42 areas have been established. These areas, widely distributed across the province, vary in size, character and significance but all are regarded as important for their historic, scientific, aesthetic or cultural values. The largest is a 938 -sq. mile block covering the Pukaskwa area on the north shore of Lake Superior and the second largest is a 225 -sq. mile area of treeless tundra in the northeastern tip of the province at the point where Cape Henrietta-Maria juts out into Hudson Bay; this area is the most southern arctic tundra in the world and its primitive
unspoiled landscapes and characteristically arctic wildlife are being preserved for scientific study and as unique features of the province. All other wilderness areas are less than 1 sq . mile in size.

Ontario has made another advance in meeting the rising pressures for recreational space by applying the concept of the recreational reserve. The recently created North Georgian Bay Recreational Reserve covers $4,500 \mathrm{sq}$. miles of interesting country lying generally between Algoma and Parry Sound on the north shore of Georgian Bay and including the channel between Manitoulin Island and the mainland, the 30,000 Islands, the famous route of the voyageurs via the French River, the remaining shoreline of Lake Nipissing and the LaCloche Mountains. The Reserve is not a National Park nor is it a Wilderness Area but an area following a normal course of development which is already used extensively for recreation. The plan is, by guiding the evolution of the area, to realize its full potential as a recreational paradise serving all types of needs and co-existing with a landscape of normal activity.

Ontario's vist lakeland areas make this province a vacation paradise and the number of park visitors increases year by year. Attendance in 1965 was $8,875,668$ persons and campers numbered 902,472 . Charges for vehicle entry are $\$ 1.00$ a day or $\$ 5.00$ a year and camping charges are $\$ 1.50$ a night or $\$ 9.00$ a week. At supervised tent and trailer campsites, picnic tables, fireplaces, tested drinking water and washrooms are provided. New campsites are being added at the rate of 500 to 1,000 a year and in 1965 numbered approximately 16,000 .

Interpretative and naturalist programs are being continually expanded and such services as museums, outdoor exhibits, conducted trips, illustrated talks and labelled nature trails were available in 19 parks in 1965.

The parklands of Ontario are administered by the Parks Branch of the Department of Lands and Forests. Detailed information is contained in various booklets and maps available on request from the Department of Lands and Forests, Parliament Buildings, Toronto.

Manitoba.-The provincial park system of Manitoba, administered by the Parks Branch of the Department of Mines and Natural Resources, consists of four major classifications of outdoor recreational development: provincial parks which are large-area parks with a variety of natural attractions suited to many outdoor activities; recreational areas, the natural attractions of which are modified to accommodate recreational activities of an intensive nature; waysides, or highway parks which enhance travel routes and provide attractive rest stops; and heritage areas, which are areas of outstanding scenic beauty or have natural and physical features of special provincial interest.

Manitoba's Centennial $\$ 5,000,000$ parks program includes the development of three new provincial parks, the rehabilitation and expansion of existing recreational areas with a view to providing new camping and improved day-use facilities, and the development of the beritage area program to preserve and interpret sites, large and small, illustrating the natural and human history of the province. A survey has been conducted to establish a development policy for waysides and a study of the shoreline potentials along Lake Winnipeg and Lake Manitoba will provide guidance for the future development of the interlake area.

At present Manitoba has nine provincial parks with a total area of $2,854 \mathrm{sq}$. miles, of which area $1,945 \mathrm{sq}$. miles are within provincial forests. In addition, there are 40 recreational areas ranging in size from 2.5 acres to 2,000 acres, and many picnic sites, campgrounds and trailer parks. Hunting and fishing lodges are common and accommodation in some of the parks runs the gamut of modern resorts and motels, hotels and cabins. Golf, tennis, swimming and boating facilities are available, as well as children's playgrounds. About 115 commercial concessions operate within the park system giving a variety of services ranging from restaurants to riding stables and boat marinas. The number of park visitors continues to increase impressively each year. In 1964 they
totalled nearly $1,500,000$ and camping groups accommodated in tents, trailers or truck campers numbered about 31,000 . Admission fees to provincial parks are 50 cents per car per day or $\$ 3$ per season.

Saskatchewan.-Saskatchewan has 14 provincial parks with a total area of 1,803 sq. miles. Cypress Hills, Duck Mountain, Greenwater Lake and Moose Mountain are operated as summer resorts with chalet, lodge, cabin and trailer accommodation as well as camp and picnic facilities. The other parks have trailer sites and camping, pienicking, boating and swimming facilities. Recreational activities include fishing, boating, swimming, golf, tennis, dancing, baseball, hiking, nature study, horseback riding, etc., and the parks are all well fitted with playground and beach equipment for children. In Cypress Hills Park, elk, antelope, deer, sharp-tailed grouse and beaver are present, and the streams have been stocked with brook and other trout. Heavy stands of tall, straight lodgepole pine and white spruce provide a unique forest cover in this area. In Duck Mountain, Moose Mountain and Greenwater Lake Parks, moose, elk and bear appear variously, and deer and beaver are common to all, as well as several varieties of grouse and many species of water and smaller land birds. Spruce, poplar and white birch provide excellent cover for wildlife. Pickerel, pike and perch are prevalent in most of the lakes. Lake trout are ardently sought by fishermen in the northern lakes. Three wilderness parks-La Ronge, Nipawin and Meadow Lake-offer wilderness-style canoe routes and 'fly-in' commercially operated fishing and hunting camps. Many roadside pienic grounds are located throughout the province and several excellent Trans-Canada Highway campsites are in use.

Sites of historic interest are marked throughout the province and include the Touchwood Hills Hudson's Bay Post, Cannington Manor Historic Park and Wood Mountain Historic Park, all of which have pienic facilities.

Alberta.-In Alberta, 44 provincial parks have been established, 41 of which, with a total area of approximately 170 sq . miles, are in use and continuing development. Cypress Hills Provincial Park with an area of 78 sq. miles is the largest and is situated in the southeast portion of the province. Other parks are: Aspen Beach, Beauvais Lake, Big Hill Springs, Big Knife, Bow Valley, Bragg Creek, Crimson Lake, Cross Lake, Dillberry Lake, Dinosaur, Entrance, Garner Lake, Gooseberry Lake, Hommy, Jarvis Bay, Kinbrook Island, Lac Cardinal, Little Bow, Little Fish Lake, Long Lake, Ma-Me-O Beach, Miquelon Lake, Moonshine Lake, O'Brien, Park Lake, Pembina River, Red Lodge, Rochon Sands, Saskatoon Island, Sir Winston Churchill, Taber, Thunder Lake, The Vermilion, Tillebrook Trans-Canada Campsite, Wabamun Lake, Williamson, Willow Creek, Winagami Lake, Woolford and Writing-on-Stone. These parks are generally provided with pienic, camping and playground facilities and are maintained by the Department of Lands and Forests primarily for the recreation and enjoyment of the residents of the province. There is a park within easy reach of almost every town. The most northerly park is Lac Cardinal, about 28 miles southwest of Peace River, and the southernmost park is Writing-on-Stone which adjoins the Alberta-Montana border. Alberta's provincial parks were visited by 2,757,500 tourists and vacationists in 1965.

In addition to the recreational parks, 23 sites have been established to mark and preserve locations of historic interest. They include: Athabasca Landing, Buckingham House, Bugnet Plantation, Coronation Boundary Marker, Early Man Site, Fort DeL'Isle, Fort George, Fort Vermilion, Fort Victoria, Fort White Earth, Frog Lake Massacre, Hay Lakes Telegraph Station, Massacre Butte, Ribstones, Rocky Mountain House Fort, Standoff, Stephansson, Twelve Foot Davis, Shaw Woolen Mill, Rev. George McDougall's Death Site, Fort McLeod, Indian Stone Pile and St. Joseph Industrial School.

Provided also for Albertans are the Wilderness Provincial Park, which adjoins Jasper National Park in the north and extends along the British Columbia border, and two wilderness areas established under the Forest Reserves Act in 1961. The Wilderness Provincial Park has an area of 2,149 sq. miles, Siffleur Wilderness 159 sq. miles and White

Goat Wilderness 489 sq . miles. The wilderness areas have been set aside to preserve as far as possible the natural scene and are not subject to any development or provided with roads.

British Columbia.-There are 239 ( 170 developed) provincial parks in British Columbia, having a total area of about 10,018 sq. miles. These parks are classifed as A, B, C and Nature Conservancy Areas. Class A parks are intended to preserve outstanding natural, seenic and historic features of the province for public recreation; they have a high degree of legislative protection against exploitation and alienation. Class B parks are also primarily for the protection of natural attractions but other resource use is permitted if it does not unduly impair recreational values. Class C parks are intended primarily for the use of local residents and are generally managed by local park boards. Nature Conservancy Areas in any park are fully protected from resource development and are dedicated to a variety of recreational uses. There are immense wilderness areas such as Tweedsmuir Park and Wells Gray Park and outstanding scenic and mountain reserves such as Garibaldi, Mount Robson, Manning and Bowron Lakes Parks. The formal gardens of Peace Arch Park are a monument to the goodwill between Canada and the United States. Vancouver Island has a chain of small forested parks that have achieved tremendous popularity with tourists; the best known are Little Qualicum Falls, Miracle Beach and Goldstream. The famous gold town of Barkerville has been restored and become the first Provincial Historic Park; Fort Steele in the East Kootenay area is also being restored to preserve another of British Columbia's pioneer settlements. Nine marine parks with mooring facilities and campsites have been developed on the islands of the Strait of Georgia for the benefit of water-borne vacationers.

The popularity of British Columbia's parks, with their integrated campsites and picnic areas, is attested by the fact that about $4,800,000$ park visits were recorded during 1965; about 25 p.c. of the visitors were campers and the remainder day visitors. Records show that Mount Seymour, Cultus Lake and Alouette Lake Parks were the most heavily used.

## Subsection 3.-Ottawa, Canada's National Capital*

Canada's capital city lies in a magnificent natural setting, its hub high on the limestone bluffs bordering the Ottawa River where it tumbles over the Chaudiere Falls and where, a short distance downstream, the lazy Rideau River falls in twin curtains over the cliffs from the south and the once-turbulent Gatineau River flows in from the north. Here Champlain paused and portaged on his way westward in 1613. The priests, soldiers and traders who followed him travelled past these cliffs and around the rapids. By this place passed most of the great overland explorers. Champlain called the river "la grande rivière des Algommequins" and early English traders called it the Grand River. "Ottawa" is the anglicized form of Outaouac or Outaouais, the name of a tribe of Indians from Lake Huron who traded with the French in the seventeenth century. They carried their furs by the river that now bears their name. The first settlement in this region is associated with an American from Massachusetts, Philemon Wright, who, in 1800, located on the north shore of the river where Hull stands today, bringing with him families and tradesmen and forming the nucleus of a busy community. Taking advantage of Britain's needs for squared timber, Philemon Wright ran the first raft of white pine to Quebec in 1806, and started the Ottawa River squared timber trade that soon came to be fostered by British tarifi concessions. This was the beginning of a great industry that remained the life blood of the community for half a century.

Settlement on the south side of the river did not begin in earnest until a generation later. During the War of 1812 communications by the St. Lawrence River, the main route to the settled area in Upper Canada, had been under American attack and a safer water route between Montreal and the Great Lakes was considered an urgent need for the

[^13]future. Ten years were spent in sporadic investigation and consideration of a route by the Rideau and Cataraqui River systems and finally, in 1826, Lieatenant-Colonel John By of the Royal Engineers was sent to the Chaudiere to build a canal from that point to Kingston. The next year two companies of Royal Sappers and Miners, numbering 162 men, began the construction. To Colonel By also goes the credit of planning the original townsite which was, in 1827, named Bytown in his honour. Where Ottawa's central area is today, the Earl of Dalhousie, the then Governor-in-Chief, had wisely secured commanding ground for the Crown in 1823 and, adjacent to this, Colonel By laid out two settlements called Upper Town and Lower Town, separated by part of the Government lands called Barrack Hill. The canal was finished in 1832 and the town that sprouted around Colonel By's military camp began to grow and prosper. Stores and banks were set up, churches and schools were built and a little manufacturing community was started in New Edinburgh near Rideau Falls.

Bytown was now the inland centre of the squared timber trade and by 1850 could boast of some fine stone buildings, among them the home of Thomas MacKay which today forms the central part of the residence of the Governor General of Canada. A change then occurred in the timber industry, the British system of preferential import duties on squared white and red pine logs was abandoned and trade began to decline. However, by this time the accessible forest stands of the eastern United States were depleted and sawn lumber was needed to house a growing population. Also, the American railway and canal network had extended to the Canadian border, making transportation easy. Encouraged by these favourable conditions and the newly recognized availability of hydro-electric power, a group of American and other lumbermen came to Bytown, beginning in 1853, and established sawmills by the Chaudiere Falls. Soon the islands about the falls and the flats on both shores were covered with lumber piles and loaded barges were on their way to the American market. The sawmill industry began its rise to dominating importance.

At the beginning of 1855, Bytown became a city and took the name Ottawa, just in time to receive a great honour and to assume a great responsibility. The United Province of Canada, since its formation in 1841, had shuttled its capital between Kingston, Toronto, Montreal and Quebec and was now trying to agree on a permanent site. At the end of 1857 Queen Victoria settled the dispute by choosing Ottawa. Government buildings for the new capital were designed and contracts were let in 1859 for their construction. However, the task was hard and the cost much greater than expected and it was not until 1866 that the government of the Province of Canada actually moved to Ottawa. The next year the first Parliament of the new Dominion of Canada met in an incomplete Parliament Building, situated on the former Barrack Hill.

The nation enjoyed a brief prosperity during most of the next decade. Ottawa grew and the government expanded as the Dominion extended its authority over more and more of British North America. In 1871, shortly after Confederation, the city had a population of about 22,000. Many fine homes and stores in stone and brick were built. The Departmental Buildings, flanking the Parliament Building on the Hill, were enlarged. An old wooden City Hall near the Canal was replaced in 1876 by a fine stone building and a large post office was erected at the city's centre. By the end of the nineteenth century, Ottawa was a flourishing industrial centre with a population of 59,000 . It remained the hub of the lumbering industry of Eastern Canada, had the largest paper mills in the country and the leading match factory in the world. However, little effort had been made to preserve or enhance its natural beauty until the Ottawa Improvement Commission was set up in 1899 and the Driveway along the Rideau Canal was begun. Even so, progress was slow in this direction but in the years up to the beginaing of the First World War the city centre began to take on a new face. Many new government buildings were erectedlaboratories, the Dominion Observatory and the Geodetic Building at the Experimental Farm, the Archives Building, the Victoria Memorial Museum, the Royal Canadian Mint and the Connaught Building. In 1912, the Grand Trunk Railway completed construction of the Union Station and of the French rennaissance-style Chateau Laurier whose turrets
continue to grace the Ottawa skyline. During this period several studies were made and plans recommended for the improvement of the National Capital but these were deferred because of the War and for other reasons. Fire destroyed the Parliament Building in 1916, leaving standing only the octagonal library now forming part of the magnificent building of modern Gothic architecture which replaced it but was tea years in the building. The city beautification program was continued by the Ottawa Improvement Commission on a slightly increased budget until 1927; in that year the Commission was reconstituted as the Federal District Commission and the program then proceeded at a more accelerated rate. The second Commission was succeeded in 1959 by the National Capital Commission.

The City of Ottawa today, with its population of close to 300,000 , is well on its way to becoming a national capital of enduring beauty and grace. It is a self-governing municipality, administered by an elected City Council, but there are underlying differences which set it apart from all other major Canadian centres. Historically, it bas always been the meeting place for the two founding peoples. It is the national Seat of Government and throughout the years the federal authorities have recognized the need of creating in and around the National Capital an area of pride, not only for the residenta of the city and its environs but for all Canadians.

Much of the work of the National Capital Commission hinges on the implementation of a long-range Master Plan, developed by the late Jacques Gréber, a famed French townplanner. The Gréber Plan tabled in the House of Commons in 1951, although not officially recognized by the Provinces of Quebec and Ontario, is the basis of much that has been accomplished. In fact, ten years after its publication it was reported that all its major proposals were in process of realization.

Success of the Plan, now and in the future, is dependent on co-operation between the Federal Government, the governments of the Provinces of Ontario and Quebec, the Cities of Ottawa, Hull and Eastview and about sixty-five other autonomous municipalities in the National Capital Region. The Plan itself was conceived as a memorial to all Canadians who gave their lives in the defence of Canada during the Second World War and was projected over a fifty-year period. It called first for the establishment of a National Capital Region encompassing some 900 sq. miles but later, in 1959, this was doubled to $1,800 \mathrm{sq}$. miles-about half in Ontario and half in Quebec. In accordance with its proposals, large "open spaces" are being provided in the Ottawa-Hull area, part of which involves the restoration of the shores of the waterways. Major restorations have taken place at Rideau Falls opposite the Ottawa City Hall, at Jacques Cartier Park in Hull, and at Vincent Massey Park which is a 75 -acre urban park in the heart of Ottawa, linked with the 50-acre Hog's Back Park surrounding the limestone chasm of Prince of Wales Falls on the Rideau River. Forty miles of riverfront land are under the control of the Commission and countless delightful areas are accessible to the public. There are some 50 miles of wide, landscaped driveways throughout Ottawa which will be extended by another 30 miles in coming years. In addition the Commission maintains 13 city-owned parks in Ottawa, including Rockcliffe and Strathcona Parks. At present Ottawa has 4,000 acres of open space.

The relocation of government buildings to suitable scattered sites has been under way for several years. The first development took place at Tunney's Pasture located on the Ottawa River in the west-central area of Ottawa. The Pasture now contains 18 buildings of various sizes. Confederation Heights, in the south-central area adjoining Hog's Back Park, now contains six attractive and functional buildings that house Government Departments, and the large Government Printing Bureau was established in Hull. In all, the grounds of more than 140 government buildings are cared for by the Commission.

Two key proposals in the Master Plan with long-range effects on Ottawa's future are the creation of the Greenbelt and the removal of railway trackage from the central sections. The Greenbelt, designed to control urban sprawl and to provide sites for governmental, industrial and research development, is a unique planning measure in North America. Within its 41,500 aeres the Commission encourages agriculture, reforestation and public recreation areas.

Railway relocation, possibly the most important element of the National Capital Plan, will be largely completed by 1967. It involves removal of 32 miles of track, much of it in the central sections of the city, elimination of 72 level crossings, many in high density urbanized areas, and is a prime consideration in Federal Government redevelopment of LeBreton Flats, the old Union Station sector in downtown Ottawa which has now been cleared, and sections of Sussex Drive near the approaches of the new Macdonald-Cartier Bridge across the Ottawa River.

North of Ottawa and Hull, in Quebec, an 88,000 -acre recreation area known as Gatineau Park has been developed by the Commission. It is a wilderness area, extending northward from Hull for 35 miles. With 25 miles of parkway, magnificent lookouts, lakes, fishing streams, beaches, picnic areas, camping sites and walking trails, the park is one of the finest recreation areas in Canada, enjoyed by tens of thousands of visitors yearly.

In addition to its own programs, the National Capital Commission extends planning aid and advice to municipalities in the National Capital Region but only on request; at no time does the Commission seek to impose its proposals on the autonomous governments concerned with local affairs in the region. Financial aid in the form of grants is made to municipal governments in special circumstances.

The Commission has 20 members, including a chairman, and employs between 600 and 800 people, depending on season, in carrying out its development and maintenance programs. It reports to Parliament through the Minister of Public Works.

## Section 2.-Wildlife Resources and Conservation*

Wildlife in Canada is an important renewable natural resource. In the early days wildlife was, and in remote areas still is, a form of sustenance in the hinterland, and trade in fur determined the course of exploration and settlement. During the period of the opening up of the country, a number of mammals and birds became seriously depleted or extinct. The passenger pigeon, the great auk and the Labrador duck became extinet, the buffalo vanished from the prairies, and elk, prong-horn antelope, and muskoxen were reduced to small fractions of their former numbers. Wildlife habitat has been reduced by the cuttiag and burning of the forests, the pollution of streams, industrial and urban development, drainage of wetlands, building of dams, and other changes in the land.

Wildlife has been changed and influenced by man to the degree that he has changed and influenced the environment for wildife. The arctic and alpine tundra, one of Canada's major vegetational regions, has been changed hardly at all; the adjacent subarctic and subalpine non-commercial forests have been changed principally as a result of increased human travel causing more forest fires; the great forest farther south has not lost its real character through being managed for commercial use; cultivable lands, whether originally forest or grassland, have completely changed but often they and the managed forest are better for some forms of wildlife than the original wilderness. There are more moose, deer, ruffed grouse and probably more coyotes than in Indian days. Fur species, such as beaver and muskrat, are easily managed and many small mammals and birds thrive better in fields and woodlots than in the virgin forests, provided that they are not poisoned by pesticides. At the present time, the harvestable surplus of game and fur species across Canada is seldom fully utilized and it is quite clear that wildlife will remain abundant wherever there is suitable habitat and enlightened management.

Thus, Canada today is known throughout the world for the wealth and variety of its wildlife. It maintains most or all the existing stocks of woodland caribou, mountain sheep, wolves, grizzly bears and wolverines, to mention a few. And these animals exist not only

[^14]pecause of the vastness of their habitat but also because of man's efforts to preserve them. There is evidence of concern about the preservation of wildlife by the early Canadians; there were game laws in force in the original provinces when all but a few thousand acres of land were still the patrimony of the Indians. In 1885 pioneer conservationists were instrumental in establishing Banff Park in Alberta, and in 1887 a bird sanctuary, the first on the Continent, was established at Last Mountain Lake in Saskatchewan. Concern to preserve Canada's wildlife heritage led to the complete protection of wood bison in 1893 and to the purchase and establishment of a nucleus herd of plains bison at Wainwright in Alberta in $190^{\circ}$ Thus was formed the basis of wildife conservation efforts, which, for a long time, took the form of protection of certain species from destruction by man or predator. Better knowledge of nature's operations and recognition that many factors combine to cause fluctuation in wildlife numbers are now being reflected in scientifically based hunting seasons and limits. The science of animal numbers is new and sometimes runs counter to popular prejudice but it is well understood that any area will support only so many animals, and species that are highly productive must have a quick turnover. Consideration of wildlife must never be separated from consideration of its environment and if the environment is fully stocked the annual increment need only replace the losses. All extra is surplus, only part of which is taken by predators and part, if the animal is a game species, by man.

As a natural resource, wildlife within the provinces comes under the administration of the respective provincial governments; wildlife on federal lands and certain problems of national or international interest are the concern of the Federal Government.

The Canadian Wildlife Service.-The Canadian Wildlife Service deals with most wildife problems coming within the jurisdiction of the Federal Government. It was organized in 1947 to meet the growing need for scientific research in wildlife management and became a Branch of the Department of Indian Affairs and Northern Development in 1966. The Service conducts scientific research into wildlife problems in the Northwest Territories, Yukon Territory and the National Parks, advises the administrative agencies concerned on wildlife management, and co-operates in the application of such advice. It administers the Migratory Birds Convention Act, provides co-ordination and advice in connection with the administration of the Game Export Act in the provinces, deals with national and international problems relating to wildlife resources, and co-operates with other agencies having similar interests and problems in Canada and elsewhere.

The Migratory Birds Convention Act was passed in 1917 to give effect to the Migratory Birds Treaty signed at Washington in 1916. The Canadian Wildife Service is responsible for recommending the annual revision of the Migratory Bird Regulations, which govern such matters as open seasons for migratory game birds and other hunting details, taking and possessing migratory birds for scientific or propagating purposes, eiderdown collecting, etc. The Act and Regulations thereunder are enforced by the Royal Canadian Mounted Police, and in both administration and enforcement co-operation is received from provincial authorities. There are 106 migratory bird sanctuaries in Canada, having a total area of 43,887 sq. miles. Bird banding provides valuable information on the migration of birds and their natural history and is especially useful in waterfowl management. Serially numbered bands supplied by the United States Bureau of Sport Fisheries and Wildlife are used in Canada as well as in the United States.

A national wildlife policy and program was tabled in the House of Commons in 1966 after comprehensive discussions with the provinces and citizens' conservation organizations. The new policy is designed to increase research programs, to bolster dwindling wildife resources, to provide better information to serve all wildlife interests, and to improve the supply of professionally trained wildlife biologists. Many research projects under way were continued during 1966. These included the study, in co-operation with the governments of Manitoba and Saskatchewan and the Council of the Northwest Territories, of barren-ground caribou and of wolves that prey upon caribou. Human utilization is still
the most important factor in herd reduction but other significant factors from time to time include effects of forest fires on winter range, predation, accidents, and poor calf survival. Studies were continued on mink, muskrat and beaver in the Mackenzie District, and of polar bear in Keewatin and Franklin Districts. Big game mammals in the National Parks were also the object of continued study, special attention being given to mountain sheep and elk in the mountain parks of Alberta, where large populations of those species facilitate investigations. In Wood Buffalo Park, investigations into the problems of disease and low reproductive rates among bison were continued in the hope that some control of each might be achieved. A small herd of wood bison was captured, certified as disease-free and transferred to Elk Island National Park for propagation and eventual release in areas of the species' original range. Studies of the relationship between forests and wildlife were initiated in New Brunswick in co-operation with the federal Department of Forestry and Rural Development.

Damage to cereal crops by wild ducks and sandhill cranes continued to receive intensive study and much time was devoted to other species greatly reduced in number or in danger of extinction, such as the trumpeter swan and whooping crane. Investigations of migratory waterfowl were expanded. Kill surveys previously conducted in Prince Edward Island, New Brunswick, Quebec and Ontario were replaced by a single country-wide survey based on sales records of the Canada Migratory Game Bird Hunting Permit, which was used for the first time in 1966. A crop-damage survey in the Prairie Provinces is being conducted annually. Arctic bird-banding programs were continued, as were pilot programs of wetlands leasing. The loss of wetlands to drainage and filling for agricultural and other purposes poses a serious threat to the waterfowl resource. A major program of preserving wetlands by leasing and acquisition will begin in 1967.

The Service opened a new Prairie Waterfowl Research Centre on the campus of the University of Saskatchewan in Saskatoon in 1966. Also, a national registry of pesticide residues in wildlife has been established. Research in limnology is oriented toward the maintenance of adequate stocks of fish. Subjects of research include productivity of National Park waters, the biology of fish and associated fauna. Adequate stocks of game fish are provided and maintained through modern methods of management where they can be applied without detriment to the aesthetic values of the areas concerned.

The Service's research staff totals 59. Specialists covering mammalogy, limnology, migratory bird populations, migratory bird habitat, ARDA, pesticides, pathology and biometrics are stationed at the head office in Ottawa. Offices are located at Fort Smith and Inuvik, N.W.T., Whitehorse, Y.T., Vancouver, B.C., Edmonton, Alta., Saskatoon, Sask., Winnipeg, Man., Ottawa and Aurora, Ont., Quebec, Que., Sackville, N.B., and St. John's, Nfld. Headquarters for the Western Region is in Edmonton and for the Eastern Region in Ottawa. A number of university graduates and undergraduates are engaged annually to assist in summer field work. Sixteen officers are engaged in an inventory of wildlife land capability under the ARDA program; the Canada Land Inventory will cover $1,000,000 \mathrm{sq}$. miles of Canada, primarily in the southern portions, and will be completed in the next four years. A program to offer scholarships of $\$ 1,200$ to graduate students in wildlife and allied fields was in its third year in 1966, when ten scholarships were awarded.

Provincial Government Wildlife Conservation Measures.-As stated previously, each province has jurisdiction over its own wildlife resources. The measures adopted by the respective provincial governments to conserve these resources are outlined in the 1963-64 Year Book at pp. 46-52. The conservation of wild fur-bearing animals in the different provinces is discussed in the Fisheries and Furs Chapter, Part II, and information on provincial conservation of fisheries resources is given in Part I of the same Chapter, together with data relating to the work of the Fisheries Research Board of Canada and to international fisheries conservation (see Index).

## PART III.-CLIMATE AND TIME ZONES*

## Section 1.-Climate

Just as there are great differences in the weather throughout Canada at any given instant, there are also many climates. These climates are similar to those in Europe and Asia extending from the Arctic down to the mid-northern hemispheric latitudes. Because Canada is situated in the northern half of the hemisphere, most of the country loses more heat annually than it receives from the sun. The general atmospheric circulation compensates for this and at the same time produces a general movement of air from west to east. Migrant low pressure areas move across the country in this "westerly zone", producing storms and bad weather. In intervals between storms there prevails the fair weather associated with high pressure areas.

Although the movement of migrant high and low pressure systems within the zone of the westerlies is the most significant climatic control over Canada, the physical geography of North America contributes greatly to the climate. On the West Coast, the western Cordillera limits mild air from the Pacific to a narrow band along the coast, while the prairies to the east of the mountains are dry and have extreme temperatures because they are shielded from the Pacific Ocean and are in the interior of a large land mass. In addition, the prairies are part of a wide north-south corridor open to rapid air flow from either north or south which often brings sudden and drastic weather changes to this interior area. On the other hand, the large water surfaces of Eastern Canada produce a considerable modification to the climate. In southwestern Ontario winters are milder with more snow, and in summer the cooling effect of the lakes is well illustrated by the number of resorts along their shores. On the East Coast, the Atlantic Ocean has considerable effect on the immediate coastal area where temperatures are modified and conditions made more humid when the winds blow inland from the ocean.

The following table gives temperature and precipitation data for typical stations in the various regions of Canada. Temperatures in this table refer to observations taken in a thermometer shelter which has been placed in a representative location with the thermometer bulbs four feet above the surface of the ground. Mean January and July temperature data are based on records over the 30 -year period from 1931 to 1960 except for far northern stations where the available period of record is shorter. After an average temperature is obtained for each day in January over a 30-year period, the mean January temperature may be arrived at by striking a mean of these 930 daily values. The mean July temperatures may be obtained in a similar manner. The highest and lowest temperatures on record refer to the absolute extremes for the entire period of record at each station. Average dates are shown for the last occurrence in spring of a temperature of $32^{\circ} \mathrm{F}$ or lower and for the first occurrence in autumn of freezing temperatures at the fourfoot level in the thermometer shelter.

The official Canadian rain gauge is a small cylinder in which the rain is caught and then measured to one hundredth of an inch with a simple measuring device. Freshly fallen snow is measured as it lies on the ground and recorded to the tenth of an inch. Total precipitation values as shown in the table are the sum of the total rainfall and one tenth of the total snowfall. For the purposes of this table, a day with precipitation is one on which at least one hundredth of an inch of rain or one tenth of an inch of snow has fallen.

[^15]Temperature and Precipitation Data for Typical Stations in the Various Distriets

| District and Station | Tempriatures (Fahrenheit) |  |  |  |  |  | Precipitation |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | MeanJan. | Mean July | Highest on Record | Lowest <br> on <br> Record | Av. Dates of Freezing Temperatures ( $32^{\circ} \mathrm{F}$ or Lower) |  | Total <br> (All <br> Forms) ${ }^{1}$ | Snowfall | Av. Number of Days (All Forms) |
|  |  |  |  |  | Last inSpringFirst inAutuma |  |  |  |  |
|  |  |  |  |  |  |  | in. | in. |  |
| Newfoundland- |  |  |  |  |  |  |  |  |  |
| Leland of Newioundand-Belle Isle.............Gander............St. Andrew's.........St. John's........... |  |  |  |  |  |  |  |  |  |
|  | 13.5 20.8 | 49.1 62.3 | 73 96 | -31 | June 20 | Sept. 27 | 33.56 40.35 | 92.0 | 152 |
|  | 24.6 | 59.3 | 81 | -11 -11 | June 4 | Sept. 27 | 42.66 | 127.1 | 196 156 |
|  | 24.3 | 59.7 | 93 | -21 | June 6 | Oct. 9 | 60.98 | 149.7 | 201 |
|  |  |  |  |  |  |  |  |  |  |
| Cartwright. . . . . . . . . Gooee............. | 7.5 2.2 | 35.7 61.4 | 97 100 | -36 -38 | June 24 | Sept. 6 | 38.15 | 183.1 | 165 |
| Goobe.................. | 2.2 | 61.4 | 100 | -38 | June 5 | Sept. 16 | 32.93 | 157.6 | 164 |
| Maritlme Prorinces- |  |  |  |  |  |  |  |  |  |
| Prince Edward IslandCharlottetown......... | 19.6 | 65.6 | 98 | -27 | May 13 | Oct. 17 | 43.49 | 105.0 | 156 |
| Nova Scotia- |  |  |  |  |  |  |  |  |  |
| Annapotis Royal........ | 25.5 26.0 | 65.3 65.3 | 91 | -13 -21 | May 17 | Oct. 8 | 45. 61 | 75.8 | 144 |
| Sydmey.. | 26.0 24.3 | 65.3 64.3 | 98 | -21 | May 10 | Oct.  <br> Oct. 15 | 54.39 51.37 | 70.9 95.5 | 159 |
| Yarmouth. | 27.7 | 61.9 | 86 | -12 | May 3 | Oct. 25 | \$0.00 | 81.7 | ${ }_{151}^{168}$ |
| New Brunswick- |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Grand Falls | 10.6 | 65.0 | 98 | -48 | May 27 | Sept. 21 | 40.50 | 108.1 | 101 |
| Moncton. | 17.8 | 65.6 | 99 | $-36$ | May 22 | Sept. 23 | 40.86 | 108.6 | 130 |
| Saint John. | 19.5 | 63.0 | 94 | -28 | May 17 | Sept. 30 | 53.57 | 97.7 | 170 |
| Quebet- |  |  |  |  |  |  |  |  |  |
| Northern- |  |  |  |  |  |  |  |  |  |
| Fort Chimo. | -11.0 | 53.3 | 90 | - 51 | June 28 | Sept. 3 | 16.47 | 69.5 | 157 |
| Knob Lake.. | -9.4 | 55.1 | 88 | -58 | June 19 | Sept. 2 | 29.40 | 134.5 | 193 |
| Nitctequyon.. | -13.1 | 56.7 48.0 | 80 86 | -57 -57 | June 11 | Sept. ${ }^{13}$ Aug. 25 | 29.64 15.51 | 108.4 64.5 | 193 134 |
| Southern- |  |  |  |  |  |  |  |  |  |
| Bagotville. | 3.5 | 64.2 | 96 | $-40$ | May 27 | Sept. 19 | 37.67 | 127.0 | 160 |
| Father Poin | 10.8 | 58.4 | 99 | $-33$ | May 22 | Sept. 26 | 32.73 | 110.7 | 147 |
| Montreal. | 16.3 | 70.8 | 97 | -29 | Apr, 27 | Oct. 18 | 41.19 | 98.6 | 160 |
| Quebec.. | 11.3 | 66.7 | 97 | -34 | May 11 | Oct. 6 | 91.67 | 119.8 | 171 |
| Sept Iles. | 7.1 | 59.6 | 90 | - 46 | June 1 | Sept. 15 | 42.39 | 184.3 | 149 |
| Ontario- |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NorthernKapuskaging |  |  |  |  |  |  |  |  |  |
| Port Arthur- | -0.1 | 63.2 | 101 | -53 | June 10 | Sept. 5 | 33.78 | 123.1 | 142 |
| Fort William......... | 7.2 | 63.5 | 104 | $-42$ | June 1 | Sept. ${ }^{9}$ | 29.40 | 84.6 | 137 |
| Sioux Lookout. . . . . . . . | -0.4 | 85.7 | 103 | -5i | May 28 | Sept. 19 | 27.59 | 85.5 | 157 |
| Trout Lake.............. | -11.0 | 60.7 | 96 | -54 | June 11 | Sept. 15 | 23.89 | 77.0 | 146 |
| Southern- |  |  |  |  |  |  |  |  |  |
| London. | 22.9 | 69.6 | 108 | -27 | May 8 | Oct. 6 | 37.19 | 72.5 | 160 |
| Ottawa................ | 12.6 | 69.2 | 102 | -88 | May 12 | Sept. 28 | 33.55 | 86.1 | 145 |
| Parry Sound............. | ${ }^{16.3}$ | 67.5 | 100 | -38 |  | Oct. 1 | 39.12 | 116.7 | 162 |
| Toronto................ | 25.0 | 71.5 | 105 | $-27$ | Apr. 30 | Oct. 17 | 30.56 | 54.9 | 143 |
| Windior | 25.5 | 71.8 | 101 | -27 | Apr, 30 | Oct. 19 | 32.81 | 38.0 | 139 |
| Pralrie Prorinces- |  |  |  |  |  |  |  |  |  |
| Manitoba- |  |  |  |  |  |  |  |  |  |
| Churchill. | -17.5 | 53.6 | 96 | -57 | June 24 | Sept. 14 | 15.99 | 69.1 | 102 |
| The Prs............... | -7.0 | 64.8 | 100 | -54 |  | Sept. 21 | 17.76 | 54.7 | 102 |
| Winnipeg. . . . . . . . . . . | 0.1 | 68.3 | 108 | -54 | May 20 | Sept. 19 | 20.35 | 51.3 | 110 |
| Saskatchewan- |  |  |  |  |  |  |  |  |  |
| Regina................. | 1.6 | 66.7 | 111 | -56 | May 29 | Sept. 15 | 15. 53 | 43.0 | 113 |
| Saskatoon. . . . . . . . . . . . | 1.0 8.9 | 68.6 66.8 | 104 | -55 | May 27 | Sept. 14 | 13.86 | 43.2 | 104 |
| Swift Current........... | 8.9 | 66.9 | 107 | -54 | May 30 | Sept. 22 | 15.27 | 44.4 | 112 |

[^16]Temperature and Prectpitation Data for Typical Statlons itn the Various Districts-concluded

| District and Station | Temprratures (Fahrenheit) |  |  |  |  |  | Prabcipitation |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Mean } \\ \text { Jan. } \end{gathered}$ | Meap July | Highest on | Lowest on | $\begin{aligned} & \text { Av. D } \\ & \text { Free } \\ & \text { Tempe } \\ & \text { (32'F or } \end{aligned}$ | tes of ing atures Lower) | Total <br> (All | Snowiall | Av. <br> Number of Days |
|  |  |  |  |  | Last in Spring | Firstin Autuinn |  |  | Fotms) |
|  |  |  |  |  |  |  | in. | in. |  |
| Pralrie Proyncesconcluded |  |  |  |  |  |  |  |  |  |
| Alberts- |  |  |  |  |  |  |  |  |  |
| Beaverlodge. | 7.4 | 60.2 | 98 | -54 | May 28 | Sept. 2 | 17.91 | 68.1 | 127 |
| Calgary.... | 14.2 | 62.0 | 97 | $-49$ | May 27 | Sept. 11 | 17.44 | 58.5 | 105 |
| Edmotiton. | 6.6 | 63.1 | 99 | -57 | May 18 | Sept. 19 | 18.64 | 53.8 | 128 |
| Medicine Hat. | 12.1 | 69.1 | 108 | -51 | May 16 | Sept. 21 | 14.29 | 48.7 | 88 |
| Sritish Columbia- |  |  |  |  |  |  |  |  |  |
| Pacific Coast and Coastal Valleys- |  |  |  |  |  |  |  |  |  |
|  | 40.4 | 56.6 | 84 | 7 | Apr. 4 | Nov. 15 | 115.39 66.39 | 10.7 | 203 |
| Langara. . . . | 37.1 | 54.4 | 88 | 6 | Apr. 19 | Nov. 28 | 66.39 | 24.3 | 255 |
| Prince Rupert. | 35.2 | 56.2 | 90 | -6 | Apr. 19 | Nov. 3 | 94.41 | 32.7 | 229 |
| Vancouver. | 37.2 | 63.8 | 92 | 0 | Apr. 3 | Oet. 28 | 41.12 | 17.8 | 179 |
| Victoria... | 39.4 | 60.1 | 95 | 6 | Mar. 1 | Dec. 6 | 27.41 | 11.5 | 148 |
|  |  |  |  |  |  |  |  |  |  |
| Glacier.... . . . . . | 13.5 | 57.9 | 98 | -32 | June 9 | Sept. 8 | 57.10 | 37.2 | 192 |
| Ksmloops | 21.4 | 69.6 | 107 | -37 | May 3 | Sept. 26 | 9.71 | 32.5 | 83 |
| Penticton. | 27.4 | 68.4 | 105 | $-16$ | May 10 | Sept. 29 | 12.08 | 25.5 | 109 |
| Princeton. | 17.3 | 63.4 | 107 | -49 | June 4 | Sept. 13 | 14.17 | 58.5 | 105 |
|  |  |  |  |  |  |  |  |  |  |
| MeBride. | 16.0 | 6.0.5 | 100 | -50 | June 17 | Aug. 23 | 21.31 | 84.3 | 125 |
| Prince George. | 11.6 | 58.9 | 102 | -58 | June 13 | Aug. 25 | 24.67 | 79.6 | 166 |
| Smithers...... | 14.9 | 57.5 | 93 | $-47$ | June 23 | Aug. 15 | 20.27 | 73.3 | 147 |
|  |  |  |  |  |  |  |  |  |  |
| Dease Lake | $-2.3$ | 55.1 | 93 | -60 | July 2 | Aug. 16 | 15.25 | 65.8 | 144 |
| Fort Nelson | -8.4 | 62.2 | 98 | -61 | May 27 | Sept. 4 | 17.13 | 67.7 | 115 |
| Fort St. John. | 4.2 | 61.1 | 92 | -53 | May 29 | Sept. $\$$ | 17.42 | 76.0 | 122 |
| Smith River. | -11.4 | 57.3 | 92 | $-74$ | June 24 | Aug. 11 | 18.28 | 79.9 | 151 |
| Yukon Territory- |  |  |  |  |  |  |  |  |  |
| Daweon | -17.6 | 59.8 | 95 | $-73$ | June 3 | Aug. 22 | 12.67 | 49.9 | 119 |
| Snag... | $-18.5$ | 57.0 | 89 | -81 | June 15 | Aug. 9 | 14.07 | 53.2 | 109 |
| Watson Lake. | -11.5 | 59.1 | 93 | -74 | May 29 | Sept. 1 | 16.98 | 82.5 | 14 L |
| Whitehorse.. | $-0.6$ | 57.5 | 91 | -62 | June 5 | Aug. 31 | 10.05 | 45.6 | 92 |
| Northwest Territories-: |  |  |  |  |  |  |  |  |  |
| Mackenzie BasinFort Good Hope |  |  |  |  |  |  |  |  |  |
| Fort Good Hope. | -22.0 | 60.5 | 95 | -69 | June 14 | Aug. ${ }^{7}$ | 10.52 | 46.3 47.9 | 110 |
| Fort Simpson.... | $-16.8$ | 62.0 50.8 | 97 | -69 | June 4 | Aug. 28 | 12.92 | 47.9 53.3 | 97 99 |
| Hay River. . | -12.2 | 59.8 | 96 | -62 | June 10 | Sept. 8 | 12.59 | 53.3 | 99 |
|  |  |  |  |  |  |  |  |  |  |
| Baker Lake. | $-27.2$ | 51.3 | 88 | -58 |  |  | 8.21 | 22.9 |  |
| Chesterfield... | -24.8 | 47.9 | 86 | $-60$ | June 29 | Sept. ${ }^{6}$ | 10.96 | 46.5 46.6 | ${ }^{96}$ |
| Coppermine. . . | $-19.4$ | 48.7 | 90 | $-58$ | June 27 | Aug. 20 | 8.57 | 46.6 | 106 |
|  |  |  |  |  |  |  |  |  |  |
| Clyde............. | $-16.6$ | 40.6 | 71 | -50 -63 | Tune 25 | ${ }^{3}{ }^{5}$ | 8.19 | 58.7 14.0 | 50 |
| Eureka......... | -34.0 | 42.4 | 67 | -6.3 | June 25 | Aug. 5 | 2.40 14.09 | 14.0 | 104 |
| Frobisher Bay. | $-15.7$ | 46.2 | 76 | -49 | June 28 | Sept. 3 | 14.99 3.17 | 80.5 18.7 |  |
| Mould Bry... | -28. 4 | 38.8 | 80 | -63 | $\stackrel{5}{3}$ | 3 3 | 3.17 5.36 | 18.7 28.8 | 74 93 |
| Resolute.. | -26.3 | 40.3 | 65 | -61 | 3 | 3 | 5.36 | 28.8 | 63 |

[^17]
## THE CLIMATE OF THE CANADIAN ARCTIC*

Early exploration of the Canadian Arctic yielded only limited information on the climate of the region. Although some of the meteorological observations were made by well-equipped scientific groups, the climatic descriptions too of en publicized were by those explorers who tended to stress the dark, rigorous aspects of the environment. As a result, in the early decades of the present century the popular concept of the Arctic was a land of perpetual snow, usually stormy and always very cold. The atmospheric processes that shape its climate were often assumed to be unique to the area and independent of those affecting other parts of the hemisphere.

The groundwork for a better understanding of the climate of the Canadian Arctic was laid just prior to 1930 when several weather reporting stations were established on the shores of Hudson Bay, on Baffin Island and along the mainland Aretic Coast. Most of these are considered to be Arctic loeations since they are generally north of the tree-line, a limit that is frequently used to define the boundary of the Arctic. North of this wellmarked natural boundary line, which runs southeastward from the Mackenzie Delta to the shore of Hudson Bay near Churchill and then eastward over northern UngavaLabrador, the growing season is too short and too cold to permit tree growth.

Reports from these southern Arctic sites emphasized the dependence of weather in middle latitudes on conditions in the Arctic. The full extent of this relationship could not be investigated, however, until the late 1940 s , when weather stations, reporting both surface and upper-air observations, were established in the polar basin on five of the Queen Elizabeth Islands. The weather picture was further clarified after 1955 when regular reports became available from two or three scientific stations on ice islands located in the Arctic Ocean and at the Distant Early Warning Line of radar stations extending along the Arctic Coast from Alaska to Baffin Island. As a result of continuous observations from this expanding network of stations, there has been a great increase in knowledge of the climate of the Arctic and the atmospheric processes that control it. The more important features are discussed below and climatic tables for many of the individual stations are added to facilitate comparison over a standard ten-year period (1951-60). For purposes of climatic comparison it would be advantageous to divide the Canadian Aretie into a number of regions, each with homogeneous climatic features, but the wide spacing of weather reporting stations and their predominantly coastal locations preclude such an approach at this time.

## Climatic Controls

To understand the climate of the Canadian Aretic one must consider to what extent the basic controls of temperate zone climate, such as distance from the equator, the major features of the atmospheric circulation, continental and maritime influences, and the nature of the land surface apply to the Arctic regions. Of these, the far north location is of prime importance, since it is responsible not only for the extreme annual range of daylight but also for the low angle at which the sun's rays strike the earth. The absence of incoming radiation from the sun during the long Arctic night results in sustained cooling of the snow and ice surfaces of the region. After a period of two or three months when the sun rises and sets in a normal 24 -hour cyele, there is a period of continuous daylight. At this time, the amount of solar radiation reaching the atmosphere over the Arctic tundra and ice-filled seas is greater than that in southern latitudes but owing to the high reflectivity of the surface only a small percentage of the heat energy remains to heat the earth and the Arctic atmosphere. Snow and ice surfaces and cloud layers, for example, reflect more than 50 p.c. of the incident radiation. Thus, not only is there an extremely large annual range of incoming radiation from the sun but the solar energy received in the course of the year is much less than at lower latitudes. The Arctic regions in fact lose more heat to space than is received from the sun.

[^18]To make up the annual deficit, heat must be transported into the region and this usualily takes place in the upper levels of the Arctic atmosphere. In contrast to this littlepublicized transfer of warm air into the Aretic, the compensating sporadic outbreaks of surplus cold air from the Polar regions are well known, especially to persons living in the temperate zone. The southward penetration of the cold air masses into the continent varies, of course, with the season. The advance is not along a broad, continent-wide front, but instead wave-like bulges form along the leading edge, which cause the cold air to surge southward in one area while it retreats northward in another. Deep low pressure areas frequently develop from the waves, spreading clouds and precipitation ahead of them as they move across the country.

For almost eight months of the year, cold air from the Arctic covers all of Northern Canada and large areas of Central Canada. Low pressure areas which form along its southern perimeter travel across the continent under the influence of the mid-latitude belt of prevailing "westerlies" and generally remain well outside the Arctic boundaries. Strong temperature contrasts between land and water in the Baffin Bay area make this a region of frequent cyclonic activity. Although low pressure areas periodically penetrate the Arctic, the usual circulation during the November-to-May period is anticyclonic. Normally a high pressure area persists over the Mackenzie River basin and the western islands of the Canadian Arctic Archipelago during January, then advances eastward to cover the Arctic islands and the "barrens" west of Hudson Bay in April. To the east of this high pressure area, the well-known Icelandic Low and its North American offshoot, the Baffin Bay Trough, maintain a general northwest-to-southeast circulation pattern. Variations in the strength of these northwesterly winds have a most significant effect on the climate of the eastern Aretic during this period.

Although May is a month of continuous daylight in most areas of the Arctic, climatically the atmospheric circulation patterns are still those of the Arctic night. June usually marks the start of a completely changed weather regime, which continues until cold, wintry conditions return to the region in September. The main features of the average circulation during the June-to-August period are the weak low pressure area over the Arctic Ocean, reflecting the alternating influences of low and high pressure areas, and the more prominent low at the south end of Baffin Island, a recognized area of high eyclonic frequency. Even in this period the majority of depressions cross Canada south of the Arctic limits but their influences are frequently felt in the Arctic region, particularly in the Davis Strait-Baffin Bay area. Some low pressure areas move through the Arctic as well, either along the mainland coast of Canada or from the Arctic seas.

While the atmospheric circulation pattern is mainly responsible for the year-to-year variations that occur in Aretic climate, the land and water distribution and relief of the land serve to create characteristic differences in climate from one location to another. The Arctic seas, including the countless channels that surround all islands north of the Canadian mainland, and Hudson Bay make up more than half of the Arctic area and have a dominant influence on the climate of the adjoining lands. The influence is especiafly marked during the July-to-November period when there is considerable open water in the Arctic waterways but it is scarcely noticeable during the remainder of the year when, except for some well-known local areas of open water, the surfaces are completely ice- and snow-covered. During the "open water" season, maritime influences are, of course, much greater along all coastlines and over the smaller islands than in the interiors of such large land areas as Baffin, Ellesmere or Victoria Islands, or on the Arctic mainland.

Only the most easterly of the islands of the Canadian Arctic Archipelago are predominantly mountainous. The high, ice-capped mountain ranges, which rise along the eastern coastlines of Baffin, Devon and Ellesmere Islands, present a barrier to the entry of mild, moist air from the North Atlantic. The rugged relief of these islands causes locally increased precipitation, mostly along the eastern coastlines. For example, the
heaviest snowfall in the Canadian Arctic occurs at the south end of Baffin Island, where frequent southeasterly winds release their moisture as they are forced to rise over the coastal cliffs. In all other sections of the Arctic, where the rolling hills and plains are generally below 1,500 feet in elevation, the relief is locally important as far as winds and temperatures are concerned but it has little effect on the regional climate.

## General Climate

For more than half of the year the snow- and ice-covered Arctic region is subjected to a "continental" type climate which is modified somewhat by the relatively warm waters beneath the ice. Temperatures average from $-20^{\circ} \mathrm{F}$ in southern sections to $-30^{\circ} \mathrm{F}$ in the north during three of the coldest months, generally remain below zero during the whole period, and seldom rise above freezing from October to May. Record low temperatures of $-55^{\circ} \mathrm{F}$ to $-60^{\circ} \mathrm{F}$ at most Arctic stations are not as low as the North American record of $-81^{\circ} \mathrm{F}$ reported at Snag in the Yukon, or even the $-70^{\circ} \mathrm{F}$ to $-75^{\circ} \mathrm{F}$ temperatures that have been reported at a few northern locations in the western provinces and Ontario. While eastern sections of the Arctic, in particular, may be subjected to substantial variations in temperature from year to year, large rapid temperature fluctuations during a particular month or season are uncommon. During this season of continuous ice-cover in the seas and channels, the Arctic is relatively cloud-free. Although low pressure areas occasionally cross the region, the cold air is too dry to permit formation of effective snow-producing clouds and, as a consequence, snowfall is very light. The scarcity of Arctic snowfall may be emphasized by comparing annual snowfall totals at Arctic stations with similar figures for cities in Southern Canada. At the Arctic locations of Isachsen, Resolute, Cambridge Bay and Baker Lake, for example, annual snowfall amounts to less than 30 inches, and these figures represent the total precipitation for fully nine months of the year, while the cities of Edmonton, Calgary, Winnipeg and Toronto receive just under 60 inches of snow, most of which falls in less than six months. Although the steady Arctic cold and light snowfall are characteristic features of the winter climate, it is only when they occur in combination with strong winds that travel becomes hazardous or, in the case of heavy blowing snow, even impossible. The most uncomfortable area and the region where blizzards are most frequent is not the high Aretic, but the coastal sections of the eastern Arctic and the barren lands surrounding Hudson Bay, where cyclonic activity is greater and strong winds more frequent than elsewhere in the Aretic.

In June, July and August, low-Iying stratus clouds and coastal fogs are notorious features of the climate. During these months all land areas are snow-free, with the exception of the permanently ice-capped mountains which form the eastern boundary of the Canadian Arctic Archipelago, and the waterways lose much of their ice cover. The majority of the land areas are frozen swamps which melt to shallow depths during this period, giving the impression that the Arctic is a very wet region. Precipitation figures do not, of course, bear this out. Rainfall makes up less than half the annual precipitation and averages from one to two inches over the northern islands to three inches along the mainland coast and to seven inches at the southern end of Baffin Island. Arctic rainfall depends mostly on the extent of cyclonic activity during this three-month period and, as this varies greatly from year to year, so also does the rainfall. The water-logged lands and cold, partially ice-covered waterways influence the climate by adding sufficient moisture to create extensive low-lying clouds and fog banks, while holding air temperatures to within a few degrees of the melting point. These months, the mildest of the year, are characterized by a uniform temperature pattern along the coasts, with temperatures generally remaining below $45^{\circ} \mathrm{F}$ and only occasionally, during brief interludes of sunny weather, exceeding $65^{\circ} F$.

It will be appreciated that the four seasons concept (winter, spring, summer and autumn), so familiar to residents of southern latitudes of Canada, cannot be readily applied to Arctic climates. If, for example, spring is considered to date from the vernal equinox,
then some of the coldest weather of the year occurs in spring. If, on the other hand, it pertains to the start of the thawing season, then spring does not arrive until late May or early June, in which case three seasons, spring, summer and autumn, must be crowded into a three or four-month period ending with the return of winter in September. In an attempt to provide a more detailed picture of the Arctic climate on a year-round basis, without resorting to rather unsatisfactory seasonal classifications, the year has been divided into four periods for discussion purposes, each period having its own characteristic climatic features.

The Climate-December to April.-By December the high Arctic is a region of darkness, the southern islands receive only a few hours of twilight at most and, even in the Hudson Bay area, four or five hours of mid-day sun do little to replenish the heat lost during long hours of darkness. This should not imply complete darkness during the Arctic night of course, since a great deal of useful light results from the moonlight and its reflection from the snow-covered landscape. Equally important to the climate of the area is the fact that the open bays and channels which supplied so much moisture to the air during the preceding four or five months have become mostly ice covered. Maximum sea-ice normally occurs in March, at which time the only significant areas of open water are to be found in Hudson Strait, northern Baffin Bay, Lancaster Sound and narrow coastal leads along the outer islands of the Archipelago.

Air Temperature.-Continuous radiational cooling from the snow-covered surfaces causes slowly falling temperatures until late in February, when the sun's rays provide enough warmth to reverse the temperature trend. Although February is the most severe month at high Arctic stations, with March rather than January a close second, the sun's rays are effective at an earlier date over the southern islands and Arctic mainland, where January is usually the coldest month.

Arctic temperatures average well below zero for the months of December through March and, over islands of the Queen Elizabeth group, during April as well. The year's coldest weather may occur ai any time during these months. Obviously the Arctic does not earn its reputation as the coldest area in Canada from the extremes of low temperature reported at its stations. If only extremes of minimum temperature are considered, several areas of Canada well south of the Arctic limits are colder. Only one Arctic station in two has a record low temperature colder than $-60^{\circ} \mathrm{F}$, and several have never reported temperatures as low as $-50^{\circ} \mathrm{F}$. These temperature extremes reflect the moderating influences of relatively warm water beneath the ice-covered channels. At inland locations in the larger islands well removed from the open or ice-covered seas, lower temperatures would be expected.

On a monthly or yearly basis, the Aretic regions are the coldeat in Canada. This feature is best illustrated by referring to the average daily temperature chart for January, which is broadly representative of temperature patterns in December, February and, in the high Aretic, March. In the southern Arctic, average temperatures in March are about $10^{\circ} \mathrm{F}$ higher than those in February. The important features of the temperature pattern are the very cold average temperatures ( $-30^{\circ} \mathrm{F}$ to $-35^{\circ} \mathrm{F}$ ) over northern Elleamere Island and adjacent smaller islands, and slightly higher ( $-25^{\circ} \mathrm{F}$ ) readings in all other icebound areas of the Arctic region. While temperatures $10^{\circ} \mathrm{F}$ to $15^{\circ} \mathrm{F}$ higher along the Arctic's eastern margins reflect the moderating influences of open water in Lancaster Sound and northern Baffin Bay, the highest average temperatures ( $0^{\circ} \mathrm{F}$ to $-5^{\circ} \mathrm{F}$ ) are found at the entrance to Hudson Strait. This relatively small area, at the southern end of Baffin Island, is dominated by open water and frequent cyclonic activity throughout the period, and its climate differs greatly from that over the remainder of the Arctic region. The severity of the climate of the Arctic is revealed when mean January temperatures of $-33^{\circ} \mathrm{F}$ at Eureka, $-25^{\circ} \mathrm{F}$ at Resolute and $-27^{\circ} \mathrm{F}$ at Baker Lake are compared with the average temperature of $-19^{\circ} \mathrm{F}$ at Snag, the station in the Yukon that boasts the lowest
recorded temperature in Canada. Mean daily temperatures for March of $-36^{\circ} \mathrm{F}$ at Eureka, $-25^{\circ} \mathrm{F}$ at Resolute and $-15^{\circ} \mathrm{F}$ at Baker Lake are indicative of the great length of the period of severe cold at Arctic stations.

The frequencies of occurrence of low temperatures at these stations provide further evidence of the coldness of the Arctic. During the four coldest months-December, January, February and March-temperatures may be expected to drop as low as $-10^{\circ} \mathrm{F}$ on 85 to 100 p.e. of the days, $-20^{\circ} \mathrm{F}$ on 70 to 95 p.e. of the days and $-30^{\circ} \mathrm{F}$ on 30 to 90 p.c. of the days (the lower frequencies apply to southern sections of the Arctic and the higher values to the northern islands of the Archipelago). Readings of $-50^{\circ} \mathrm{F}$ are about as frequent at stations in the high Arctic as in the recognized cold spots of the Yukon in December and January but are considerably more frequent in February and March. At the high Arctic stations of Eureka and Isachsen the longest uninterrupted spells with temperatures $-50^{\circ} \mathrm{F}$ or lower, during the decade 1951-60, were four and five days respectively. On one occasion, temperatures remained below $-40^{\circ} \mathrm{F}$ at Eureka during ten consecutive days. Several northern Aretic stations have failed to record temperatures higher than $-30^{\circ} \mathrm{F}$ for periods up to 22 consecutive days.

Sheltered interior locations on the larger islands are subject to greater cooling than are the coastal sites of the weather stations. This is substantiated by the temperature reports from inland Lake Hazen at the north end of Ellesmere Island. During the only winter for which data are available, temperatures were consistently lower at this location than at the nearby stations of Eureka and Alert.

These statistics suggest that even brief warming trends are unlikely during this period. Although temperatures rarely rise above the freezing point north of the Arctic Circle, a favourable alignment of low pressure areas off the east coast may occasionally permit mild Atlantic air to penetrate the eastern sections of the region.

The familiar day-to-night temperature fluctuations of Southern Canada are most evident during April in the Arctic. For the remainder of the period variations during the calendar day are caused by changes in cloud cover or wind speed. Temperatures rise when clouds spread over the Arctic skies or when winds strengthen, and fall when the winds decrease or skies clear. Such random variations during the 24 hours are of the order of 8 to 12 degrees at high Arctic sites and 15 to 20 degrees at southern locations.

Degrec-Days.-Monthly and annual totals of degree-days below $65^{\circ} \mathbf{F}$ (heating degreedays) are often used in Southern Canada for predicting fuel requirements for heating buildings, and degree-days below $32^{\circ} \mathrm{F}$ (freezing degree-days) permit estimates of frost penetration in soils and ice formation in lakes and the sea. Since cumulative degree-day values give an indication of the severity of the climate as well as the duration of cold weather, they may also be used to compare temperature regimes of the Arctic and Southern Canada. Reference to the climatic tables (pp. 64-72) reveals that annual heating degreeday totals at most Arctic stations, with the exception of locations at the south end of Baffin Island, average over 20,000 , more than twice the 10,000 heating degree-days at Edmonton and Winnipeg and almost four times the 5,500 heating degree-days during a year at Vancouver. Freezing degree-days decrease from 12,000 over the Queen Elizabeth Islands to 6,000 along the shores of Hudson Strait, in striking contrast to 500 freezing degree-days in a winter at Toronto and 1,500 at Montreal.

Snowfall.-Throughout the December-April period the frigid Arctic atmosphere contains so little moisture that the few disturbances venturing this far north produce only thin, diffuse clouds and consequently very light snowfall. Average cloudiness north of the Arctic Circle is just under 40 p.e. South of this latitude, and particularly at the entrance to Hudson Strait, average cloud cover is considerably higher ( 70 p.e.). Cloudy days are more frequent in those areas of the eastern Arctic influenced by open leads in the
ice-covered channels. Stations in the Arctic Archipelago report less than 10 inches during this period. There is a general north-to-south increase in monthly snowfall from one to two inches over the northern islands, to four inches along the mainland coast and nearly 10 inches at the storm-battered southeast tip of Baffin Island.

Surface Winds.-Attention was directed, in an earlier paragraph, to the prevalence of northwesterly winds during the period December to April in all but the extreme western sections of the Archipelago. Although the average circulation is northwesterly, with 40 to 70 p.c. of the winds from this quadrant, winds are so dependent on local topography that considerable variations do exist, often between sites only a few miles apart. Sheltered inland locations experience light, variable winds, while at valley and rugged coastal strips the most frequent and strongest winds follow the valley or coastline.

A surprising feature of the wind pattern over the Archipelago during this period is the large percentage of calms reported at most stations. Calm conditions occur almost 30 p.c. of the time at Isachsen, Mould Bay, Eureka, Resolute and Frobisher Bay and 45 p.c. of the time at Alert. At these stations winds are light (under 10 miles an hour) more than half the time. At Sachs Harbour and at exposed sites on the barrens west of Hudson Bay, approximately one third of all winds fall into this category. Less than 20 p.e. of the winds are in the 20 - to 29 -miles-an-hour class at most stations, and less than 10 p.c. are strong winds ( 30 miles an hour or stronger). Over the Arctic islands average wind speeds are about 10 miles an hour although considerably higher average speeds (13-19 miles an hour) are reported from the vicinity of Hudson Bay and Hudson Strait. Hourly wind speeds have exceeded 60 to 70 miles an hour at most locations and several stations along the exposed eastern flank of Baffin Island have reported winds of 100 miles an hour.

Wind Chill.-With the exception of the Hudson Bay-Hudson Strait area, winds at most Arctic stations are no stronger than those at cities in Southern Canada. However, because of the low temperatures at which they occur their added chilling effects are considerable. The term "wind chill" is often used to indicate the relative severity, or human discomfort, of the combination of wind and low temperature. On the basis of wind chill, the most severe areas during the coldest month are the barrens northwest of Hudson Bay.

Blowing Snow.-Wind speeds are critical because, in addition to winds intensifying the feeling of cold, they are responsible for blowing snow, the major deterrent to travel during this period. As residents of the Prairie Provinces are well aware, blizzards or storms of blowing snow are not confined to the Arctic regions only. However, since Arctic snow is so fine and powdery and since the treeless plains permit a clean sweep by the wind, blowing snow may occur in the Arctic with relatively light winds and it constitutes a much greater problem than on the prairies. In the Arctic, the extent of blowing snow depends on whether the wind is related to local topography or is part of a large-scale circulation pattern. In the latter case, blowing snow conditions, with visibilities often reduced to a few yards, may cover large sections of the Arctic for periods of three or four days.

Visibility in blowing snow varies from station to station but in most cases is directly related to wind speed. Although drifting conditions may be initiated by winds of 10 to 19 miles an hour, less than 5 p.c. of the winds in this speed group give blowing snow during the period December to April. One half of the 20 - to 29 -miles-an-hour winds may be expected to cause blowing snow and nearly 90 p.c. of strong winds ( 30 miles an hour) are associated with blowing snow. In the case of strong winds more than 50 p.c. of the reported visibilities are under oae half mile, and more than 80 p.c. are less than three miles.

Although visibilities at most Arctic stations are reduced to six miles nearly one third of the time during this period, values low enough (three miles) to restrict aircraft operation are reported less than 25 p.c. of the time. Blowing snow is the cause of the restricted visibility in over half the cases.

Fog.-"Steam fog" and "Arctic sea smoke" are the names given to the type of fog that forms when very cold air passes over areas of open water. Steam fog is often observed in the Arctic during the period October to April, but it is relatively localized and usually does not persist more than a few miles downwind from the originating leads, or areas, of open water. Ice fogs occur rather infrequently in the Canadian Arctic because of the lack of moisture in the very cold air. However, as settlements become larger and vehicular and aircraft traffic increases, sufficient moisture may be added to the air through fuel combustion to cause ice fogs at these sites.

The Climate-May and June.-Following the return of the sun to the Arctic skies in February, the days lengthen rapidly until, by May, most sections of the Arctic have no sunset. Temperatures start the upward climb, slowly at first in March then more rapidly in April, but above-freezing temperatures are not reached until late May or early June. Even at these late dates sharp falls in temperature to near zero are possible.

May is a month of increased cloudiness and snowfall at most stations, due in part to more numerous open-water leads in Hudson Bay and in some eastern Arctic sounds, and to the arrival of moist air from Southern Canada. Increases are noted as well in the frequencies of fog, particularly in southern sections, but as far as over-all visibilities are concerned these are offiset by fewer days with blowing snow.

Temperatures are usually a few degrees above freezing through most of June and, with around-the-clock daylight, the accumulated snow of the previous nine months quickly disappears from all lowland areas. At this time, however, the ice is still fast in most bays and channels. Mild air from Southern Canada is chilled as it passes over the extensive ice surfaces, causing appreciable increases in the frequency of occurrence of low-lying clouds and fog along the coastlines. Fogs are uncommon in the interiors of the larger land masses where sunny days are about as frequent as cloudy days.

The Climate-July and August.-During July and August the maritime influence of the seas and channels surrounding the Arctic islands stands out as a major control of the climate. By July, break-up is well advanced over Hudson Bay and in most years the navigation season opens shortly after the middle of the month. The season is delayed two or three weeks longer in the waterways separating the southern islands of the Archipelago, and in the north most of the channels remain practically icebound. Thus, throughout the Arctic, even the warm air masses that penetrate the region from Southern Canada are subjected to the cooling effects of large surfaces of ice-cold water. Evaporation from the exposed water areas and saturated ground surfaces produces a further cooling of the air masses. At the same time the additional moisture supplied to the air permits formation of extensive low-lying cloud layers, which in turn reflect much of the incoming radiation from the sun back into space.

Mean daily temperatures are quite uniform at about $40^{\circ} \mathrm{F}$ over the whole range of Arctic latitudes and exceed this value only over the larger southern islands and the Arctic mainland. Comparable July values for cities in Southern Canada are: Vancouver $64^{\circ} \mathbf{F}$, Winnipeg $68^{\circ} \mathrm{F}$ and Montreal $71^{\circ} \mathrm{F}$. At coastal locations temperatures may be expected to drop to within a few degrees of the freezing point whenever onshore winds occur, although when winds are off the land $45^{\circ} \mathrm{F}$ to $50^{\circ} \mathrm{F}$ readings are more likely. Temperatures have reached $90^{\circ} \mathrm{F}$ at such maintand settlements as Aklavik, Coppermine and Fort Chimo. Over the islands of the Archipelago, however, extreme maximum temperatures are not as high and range from $75^{\circ} \mathrm{F}$ in the south to mid $-60^{\circ}$ readings in the north.

With the exception of the southeastern Baffin Island-Hudson Strait area, where small amounts of rain or freezing rain may occur in almost any month, rainfall over the Canadian

Aretic is generally confined to the months June to September. July and August are usually the wettest months of the year with monthly rainfall totals of two inches in southern sections, decreasing northward to less than one inch over the Queen Elizabeth Islands. Snow may occur in either of these months but in most lowland areas falls are light. Although precipitation is closely related to cyclonic activity, topography is particularly important in the eastern Arctic. Windward slopes have considerably more cloudiness and precipitation than lee areas. Cumulus clouds occur in inland areas but only rarely reach the thunderstorm stage.

Despite the fact that average rainfall amounts are low, heavy rains have been reported at many Arctic locations. Several stations measured one-day rainfall of more than one inch in August 1960. In the barren, permanently frozen areas of the Arctic, rainfall of this intensity may lead to locally severe run-off, particularly in rolling or mountainous terrain.

Since aviation plays such a prominent role in Arctic development, the banks of low clouds and fog which frequent the coastlines and threaten the airports have a special significance. Stations along Hudson Strait have the greatest number of days with fog at this time, with Resolution Island reporting fog on one of every two days. At most Arctic stations, with the exception of mainland and sheltered island locations, fogs usually occur on six to eight days of each of these months. At Resolute, Mould Bay and Isachsen and at most other coastal stations, cloud ceilings are below 1,000 feet and/or visibilities below three miles about 30 p.e. of the time during this period.

The Climate-September to November.-Dwindling hours of daylight in September give notice of the imminent return of cold weather to the Arctic. Over the Queen Elizabeth Islands, mean daily temperatures are below $32^{\circ} \mathrm{F}$ by the beginning of September and by the end of the month temperatures throughout the Aretic are below freezing. Below zero readings prevail in northern sections by mid-October and in all areas except the shorelines of Hudson Strait by mid-November. Extreme minimum temperatures as low as $-15^{\circ} \mathrm{F}$ have been reported in September at the high Arctic stations of Alert, Isachsen and Mould Bay. More southerly Arctic locations do not have such low values until October.

This period is the stormiest of the year in the Arctic. Low pressure areas continue to move through the region but each is followed by a progressively colder outbreak of air from the Polar seas. The greater portion of the 20 -to- 50 -inch annual snowfall occurs during these months. Turbulence and rather severe icing may be encountered by aircraft flying in the low-lying clouds. While fogs are less frequent than in July or August, visibilities are lowered appreciably in snow storms. As ice-cover increases in the seas and bays and open water is no longer a major cloud-producing factor, the region takes on the very cold, relatively clear climate generally associated with the Arctic night. Freeze-over of most of the northern waterways is usually accomplished by November but in the southern Arctic open water has considerable influence until December.

During this period, air operations and, to a lesser extent, ground travel are frequently hampered by the "Arctic white-out", a condition that occurs when diffuse white clouds blend, without a recognizable horizon, into the shadowless, snow-covered landscape. With no sharp landmarks on the horizon, judgment of distances becomes very difficult. White-outs are not confined to this period, however, as they often occur in April or May as well.

In summary, the Canadian Arctic experiences a continental climate during more than seven months, while maritime influences predominate in most areas during the remainder
of the year. Winters are long and extremely cold, and during the warmest month of the year average temperatures are below $50^{\circ} \mathrm{F}$. On an annual basis, the region is much colder than any other part of Canada and precipitation totals are very low.

## Climatic Tables

The following tables contain climatic data for those stations in the Canadian Arctic that were in operation during the full decade 1951-60. They consist primarily of monthly temperature, precjpitation and wind data. ${ }^{*}$ Statistics are not included for DEW Line observing sites since they have only a short period of record within the 1951-60 decade. For the same reason, short-period climatic data obtained by recent research expeditions to the Barnes Ice-Cap on Baffin Island, Lake Hazen and the Gilman Glacier on Ellesmere Island, Devon Island, Axel Heiberg Island, Meighen Island and Ward Hunt Island are not listed.

## Air Temperature

All temperatures are given in degrees Fahrenheit. To obtain representative and comparable observations, all stations are equipped with standard louvered shelters in which selfregistering mercury maximum and spirit minimum thermometers are hollsed. The mean air temperature data have been derived mainly from records for the decade 1851-60. The "highest recorded" and "lowest recorded" temperatures refer to the absolute extremes for the entire period of observation at each station.

## Precipttation

Rainfall and precipitation averages are given in hundredths of inches: mean snowiall amounts are listed in tenths of inches; precipitation is the sum of rainfall plus the water equivalent (one tenth) of the snowfall.

Wind
Wind data have been obtained from anemometers with continuously recording anemographs. The most prevalent directions and average wind speeds bave been derived from the hourly wind data.

## Heating Factor (Degree-Dayg)

Below $65^{\circ} \mathrm{F}$-one degree-day results for each degree that the mean daily temperature is below the base of $65^{\circ} \mathrm{F}$.

## References and Source Material

The Meteorological Branch of the Department of Transport, Toronto, prepares and issues the regular series of current climatic data publications listed below. Also listed are publications containing detailed information on regional climates of Northern Canada.

Regular publications of the Meteorological Branch: Canadian Weather Review (monthly); Aretic Summary (semi-annual); Monthly Record of Meteorological Observations in Canada.

Boughner, C. C. and Thomas, M. K. The Climate of Canada. Canada Year Book 1959 and 1960. Ottawa, Queen's Printer, 1960. 74 p.

Kendrew. W. G. and Currie, B. W. The Climate of Central Canada. Ottawa, Queen's Printer, 1955. 194 p.

Kendrew, W. G. and Kerr, D. The Climate of British Columbia and the Yukon Territory. Ottawa, Queen's Printer, 1955. 222 p .

Rae, R. W. Climate of the Canadian Arctic Archipelago. Toronto, Canada Department of Transport. Meteorological Branch, 1951. 90 p.

Thomas, M. K. Climatological Atlas of Canada. National Research Council, Division of Building Research, and Canada Department of Transport. Meteorological Branch. Ottawa, 1953. 253 p .

[^19]
## Climatic Data for Stations in the Canadian Aretic

Aelayig
Latitude $68^{\circ} 14^{\prime} \mathrm{N}$-Longitude $135^{\circ} 00^{\prime} \mathrm{W}$-Altitude above M. S.L. 30 feet

| Montb | Air Temperature |  |  |  |  | Precipitation |  |  |  | Wind |  | $\underset{\text { Factor }}{\text { Heating }}$ <br> DegreeDays Below $65^{\circ} \mathrm{F}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Mead } \\ & \text { Daily } \end{aligned}$ | Mean <br> Daily <br> Maxi- <br> mum | Mean <br> Daily <br> Mini- mum <br> man | Highest Re* corded | Lowest Recorded | Rain | Snow | (Watal ${ }_{\text {Wat }}$ | Maximum Fall in 24 Hours | Most <br> Prevalent Direction | Average Speed |  |
|  | ${ }^{\circ} \mathrm{F}$ | ${ }^{9} \mathrm{~F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\bullet} \mathrm{F}$ | in. | in. | in. | in. |  | m.p.h. | No. |
| Jsn. | -21.7 | -14.7 | -28.6 | 44 | -59 | 0 | 4.3 | 0.43 | 0.43 | 8 | 6.0 | 2,632 |
| Feb. | -18.9 | -11.7 | -28.1 | 49 | -62 | 0 | 2.8 | 0.28 | 0.34 | S | 5.6 | 2,336 |
| Mar. | -9.1 | -0.1 | -18.0 | 49 | -56 | 0 | 4.1 | 0.41 | 0.25 | NW | 6.5 | 2.282 |
| Apr.. | 9.2 | 18.7 | -0.3 | 57 | -44 | 1 | 2.6 | 0.26 | 0.18 | N | 7.4 | 1,674 |
| May.... | 30.0 | 37.8 | 22.1 | 77 | -14 | 0.03 | 1.5 | 0.18 | 0.21 | N | 7.3 | 1,063 |
| June.... | 48.6 | 56.9 | 40.3 | 86 | 20 | 0.43 | 0.5 | 0.48 | 0.38 | N | 7.8 | 483 |
| July.... | 56.6 | 64.4 | 48.8 | 83 | 30 | 1.04 | 3 | 1.04 | 0.97 | NW | 7.0 | 273 |
| Aug... | 52.4 | 59.3 | 45.5 | 88 | 25 | 1.10 | 0.1 | 1.11 | 0.62 | NW | 7.0 | 459 |
| Sept.... | 38.9 | 43.8 | 33.9 | 76 | 12 | 0.76 | 4.6 | 1.22 | 0.58 | NW | 7.0 | 807 |
| Oct..... | 18.9 | 23.8 | 14.0 | 58 | -22 | 0.01 | 11.3 | 1.14 | 0.54 | NW | 6.2 | 1,414 |
| Nov.... | -4.4 | 1.5 | $-10.3$ | 44 | -50 | - | 6.1 | 0.61 | 0.38 | NW | 5.2 | 2,004 |
| Dec.... | -17.7 | -11.0 | -24.4 | 46 | -54 | 0 | 5.1 | 0.51 | 0.22 | NW | 5.7 | 2,530 |
| Year... | 15.2 | 22.4 | 8.1 | 93 | -62 | 3.37 | 43.0 | 7.67 | 0.97 |  | 6.6 | 18,017 |
| Period. | 1951-60 |  |  | 1926-60 |  | 1951-60 |  |  |  | 1951 -60 |  | 1930-80 |

${ }^{1}$ Average of less than $0.005 \mathrm{in} . \quad{ }^{2}$ Average of less than 0.05 in .

Alert
Latitude $82^{\circ} 30^{\prime} \mathrm{N}$-Longitude $62^{\circ} 20^{\prime} \mathrm{W}$-Altitude above M.S.L. 205 feet

| Month | Air Temperature |  |  |  |  | Precipitation |  |  |  | Wind |  | $\underset{\text { Factor }}{\text { Heating }}$ <br> DegreeDays Below $05^{\circ} \mathrm{F}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Mean } \\ & \text { Daily } \end{aligned}$ | Mean Daily Maxi- mum | Mean Daily Mini- mum | $\begin{aligned} & \text { Highest } \\ & \text { Re- } \\ & \text { corded } \end{aligned}$ | Lowest Recorded | Rsain | Snow | Total (Water) | Maximum Fall in 24 Hours | Most Prevalent Direction | Average Speed |  |
|  | ${ }^{\circ} \mathrm{F}$ | ${ }^{\bullet} \mathbf{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | in. | in. | in. | in. |  | m.p.h. | No. |
| Jan.. | -25.5 | -18.2 | -32.7 | 32 | -54 | , | 2.2 | 0.22 | 0.11 | W | 5.0 | 2,806 |
| Feb... | -27.4 | $-20.0$ | -34.8 | 30 | -53 | 0 | 2.3 | 0.23 | 0.20 | W | 5.1 | 2.610 |
| Mar.... | -27.3 | -19.9 | -34.6 | 28 | -54 | 0 | 2.5 | 0.25 | 0.21 | W | 4.6 | 2,861 |
| Apr.... | -11.1 | -3.5 | -18.7 | 30 | -50 | 0 | 2.3 | 0.23 | 0.13 | W | 4.9 | 2,283 |
| May.... | 11.7 | 17.6 | 5.8 | 47 | -17 | 1 | 3.6 | 0.36 | 0.45 | W, NW | 5.1 | 1,652 |
| Jane.... | 31.8 | 36.3 | 27.3 | 63 | 10 |  |  | 0.48 | 0.73 |  | 6.5 | ${ }_{803}^{996}$ |
| July.... | 39.1 | 44.7 | 33.5 | 68 | 22 | 0.30 | 2.8 | 0.58 | 0.54 | NE | 7.6 | 803 |
| Aug.... | 33.4 | 37.6 | 29.1 | 59 | 5 | 0.40 | 7.2 | 1.12 | 0.72 | NE | 6.0 | ${ }^{980}$ |
| Sept.... | 14.9 | 20.0 | 9.8 | 42 | -15 | 0.01 | 11.6 | 1.17 | 0.55 | W | 6.4 | 1,503 |
| Oct..... | -3.7 | 2.7 | - 10.0 | 33 | -32 |  | 6.3 | 0.63 | 0.80 | W | 6.9 | 1,900 |
| Nov.... | -14.5 | -7.8 | -21.1 | 31 | -40 | 0 | 2.4 | 0.24 | 0.18 0.25 | W | 5.8 4.8 | 2,385 2,700 |
| Dec.... | -22.4 | -15.3 | -29.4 | 17 | -31 | 0 | 2.8 | 0.28 | 0.25 | W | 4.6 | 2,700 |
| Tear... | -0.1 | 6.2 | -6.3 | 48 | -54 | 0.88 | 48.4 | 5.77 | 0.80 |  | 5.7 | 28,488 |
| Period. | 1851-60 |  |  | 1950-60 |  | 1951-60 |  |  |  | 1951-60 |  | 1951-60 |

${ }^{1}$ Average of less than 0.005 in.

Climatic Data for Stations in the Canadian Arctic
Arctic Bay
Latitude $73^{\circ} 00^{\prime} \mathrm{N}$-Longitude $85^{\circ} 18^{\prime} \mathrm{W}$-Altitude above M.S.L. 36 feet

| Month | Air Temperature |  |  |  |  | Precipitation |  |  |  | Wind |  | Heating <br> Factor <br> Degree- <br> Days <br> Below $65^{\circ} \mathrm{F}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Mean Daily | Mean Daily Maxi- mum | Mean Daily Mini- mum | Highest Recorded | Lowest Recorded | Rain | Snow | Total (Water) | $\begin{aligned} & \text { Maxi- } \\ & \text { mum } \\ & \text { Fall } \\ & \text { in } 24 \\ & \text { Hours } \end{aligned}$ | Most <br> Prevalent Direction | Average Speed |  |
|  | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | in. | in. | in. | in. |  | m.p.h. | No. |
| Jan... | -21.9 | -15.0 | -28.7 | 40 | -52 | 1 | 2.4 | 0.24 | 0.20 |  |  | 2,678 |
| Feb.... | -25.2 | -18.2 | -32.1 | 36 | -57 | 0 | 2.0 | 0.20 | 0.18 |  |  | 2,562 |
| Mar.... | -19.7 | -11.4 | -27.9 | 34 | -49 | 0 | 2.1 | 0.21 | 0.29 |  |  | 2,564 |
| Apr.... | $-2.2$ | 7.1 | -11.4 | 36 | -37 | 0 | 1.6 | 0.16 | 0.32 |  |  | 2,055 |
| May.... | 18.6 | 26.1 | 11.0 | 51 | -15 | 1 | 2.9 | 0.29 | 0.22 | . |  | 1,426 |
| June.... | 36.1 | 41.8 | 20.3 | 63 | 11 | 0.23 | 1.6 | 0.39 | 1.03 |  |  | 870 |
| July.... | 42.4 | 49.5 | 35.3 | 75 | 22 | 0.78 | 0.1 | 0.79 | 0.62 |  |  | 682 |
| Aug.... | 40.7 | 46.4 | 35.0 | 65 | 24 | 0.70 | 0.2 | 0.72 | 0.54 |  |  | 744 |
| Sept.... | 29.8 | 33.8 | 25.7 | 56 | 5 | 0.38 | 5.1 | 0.89 | 0.94 |  |  | 1,062 |
| Oct.... | 11.8 | 17.0 | 6.5 | 44 | -26 | 1 | 6.0 | 0.60 | 0.73 |  |  | 1,606 |
| Nov.... | -9.2 | -3.0 | $-15.4$ | 36 | -42 | 0 | 2.4 | 0.24 | 0.15 |  |  | 2,142 |
| Dec.... | -18.8 | -12.1 | -25.5 | 34 | -50 | 0 | 1.8 | 0.18 | 0.12 |  |  | 2,542 |
| Year... | 6.9 | 13.5 | 0.2 | 75 | -57 | 2.09 | 28.2 | 4.91 | 1.03 |  |  | 20,933 |
| Period. | 1951-60 |  |  | 1937-60 |  | 1951-60 |  |  |  |  |  | 1937-60 |

${ }^{1}$ Average of less than 0.005 in .
Baker Lake
Latitude $64^{\circ} 18^{\prime} \mathrm{N}$-Longitude $96^{\circ} 00^{\prime} \mathrm{W}$-Altitude above M.S.L. 41 feet

| Month | Air Temperature |  |  |  |  | Precipitation |  |  |  | Wind |  | Heating <br> DegreeDays Below $65^{\circ} \mathrm{F}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Mean Daily | Mean Daily Maxi- mum | Mean Daily Mini- mum | Highest Recorded | Lowest Recorded | Rain | Snow | Total (Water) | $\begin{aligned} & \text { Maxi- } \\ & \text { mum } \\ & \text { Full } \\ & \text { in } 24 \\ & \text { Hours } \end{aligned}$ | Most <br> Prev- <br> alent <br> Direc- <br> tion | Average Speed |  |
|  | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | in. | in. | in. | in. |  | m.p.h. | No. |
| Jan..... | -27.2 | -20.9 | -33.5 | 12 | -57 | 0 | 1.9 | 0.19 | 0.10 | NW | 14.6 | 2,858 |
| Feb. | -27.0 | -20.6 | $-33.3$ | 16 | -58 | 0 | 1.7 | 0.17 | 0.13 | NW | 14.1 | 2,599 |
| Mar.... | $-15.4$ | $-8.1$ | -22.6 | 30 | -58 | 0 | 2.2 | 0.22 | 0.18 | N | 13.5 | 2,492 |
| Apr. ... | 2.5 | 10.7 | -5.7 | 39 | -33 |  | 3.7 | 0.37 | 0.18 | N | 14.1 | 1,875 |
| May.... | 21.5 | 27.5 | 15.5 | 49 | -15 | 0.15 | 1.8 | 0.33 | 0.42 | N | 14.2 | 1,349 |
| June.... | 39.0 | 45.6 | 32.3 | 74 | 8 | 0.79 | 0.3 | 0.82 | 0.56 | N | 12.0 | 780 |
| July.... | 51.3 | 60.2 | 42.4 | 80 | 29 | 1.58 |  | 1.58 | 1.41 | N | 11.3 | 425 |
| Aug.... | 50.0 | 57.4 | 42.6 | 82 | 28 | 1.77 | 0 | 1.77 | 0.83 | N | 12.7 | 465 |
| Sept.... | 37.1 | 42.1 | 32.0 | 68 | 16 | 126 | 0.9 | 1.35 | 1.01 | NW | 13.6 | 837 |
|  | 18.5 | 23.9 | 130 | 49 | -19 | 0.37 | 4.1 | 078 | 1.26 | N | 15.0 | 1,442 |
| Nov. | -4.0 | 2.7 | $-10.7$ | 36 | -40 | 0 | 3.5 | 035 | 0.34 | N | 14.6 | 2,070 |
| Dec.. | -18.8 | -12.3 | $-25.3$ | 24 | -50 | 0 | 2.8 | 0.28 | 0.19 | N | 14.8 | 2,598 |
| Year... | 10.6 | 17.3 | 3.9 | 82 | -58 | 5.92 | 22.9 | 8.21 | 1.41 |  | 13.7 | 19,790 |
| Period. | 1951-60 |  |  | 1946-60 |  | 1951-60 |  |  |  | 1951-60 |  | 1951-60 |

[^20]Climatic Data for Stations in the Canadian Aretle
Cambridge Bay
Latitude $69^{\circ} 07^{\prime} \mathrm{N}$-Lonsitude $105^{\circ} 01^{\prime} \mathrm{W}$-Altitude above M.S.L. 47 feet

| Month | Air Temperature |  |  |  |  | Precipitation |  |  |  | Wind |  | Heating <br> DegreeDaya Below $85^{\circ} \mathrm{F}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Mean Daily | Mean <br> Daily <br> Maxi- <br> mum | Mean Daily Minimum | Highest Re• corded | Lowest Recorded | Rain | Snow | Total (Water) | Maxi- <br> mum <br> Fall <br> in 24 <br> Hours | Most <br> Prevalent Direction | Averase Speed |  |
|  | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{5} \mathrm{~F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | in. | in. | in. | in. |  | m.p.h. | No. |
| Jan... | -27.4 | -20.8 | -33.9 | 21 | -63 | 0 | 2.8 | 0.28 | 0.22 |  | 12.3 | 2.840 |
| Feb. | $-314$ | -26.5 | -36.3 | 11 | -59 | 0 | 1.7 | 0.17 | 0.22 | W | 10.7 | 2,684 |
| Mar. | -23.9 | -17.1 | -30.6 | 21 | -52 | 0 | 2.2 | 0.22 | 0.23 | W | 10.6 | 2,675 |
| Apr..... | -6.2 | 2.0 | -11.4 | 43 | -42 | 0 | 1.8 | 0.18 | 0.12 | N, NW | 12.3 | 2.157 |
| May.... | 15.2 | 21.7 | 8.7 | 45 | -31 | 0.02 | 2.4 | 0.26 | 0.21 | NW | 12.7 | 1,541 |
| June.... | 34.9 | 40.0 | 29.8 | 72 | ${ }^{6}$ | 0.41 |  | 0.67 | 0.61 | N | 12.9 | 897 |
| July.... | 46.2 | 53.4 | 39.0 | 75 | 30 | 0.80 | 0.1 | 0.81 | 0.80 | N | 12.9 | 561 |
| Aug.... | 44.8 | 50.6 | 38.9 | 76 | 26 | 0.93 | 2 | 0.93 | 0.97 | E | 12.8 | 642 |
| Sept.... | 32.0 | 35.8 | 23.1 | 60 | 7 | 0.32 | 2.9 | 0.61 | 0.41 | E, NW | 13.4 | 999 |
| Oet. | 11.8 | 17.6 | 5.9 | 39 | $-25$ | 0.03 | 4.2 | 0.45 | 0.37 | NW | 14.0 | 1,652 |
| Nov. | - 12.0 | -5.7 | $-18.3$ | 27 | -44 | 1 | 3.3 | 0.33 | 0.17 | W | 12.8 | 2,277 |
| Dec. | -22.2 | -16.1 | $-28.3$ | 18 | -57 | 0 | 2.4 | 0.24 | 0.16 | W | 10.8 | 2,697 |
| Year... | 5.2 | 11.2 | -0.3 | 76 | -63 | 2.51 | 26.4 | 5.15 | 4.87 |  | 12.3 | 21,6\% |
| Period. | 1951-60 |  |  | 1935-60 |  | 1951-60 |  |  |  | 1951-60 |  | 1935-00 |

${ }^{1}$ Average of less than 0.005 in .
${ }^{1}$ Aversge of less than 0.05 in .

Chegrerificld
Latitude $63^{\circ} 20^{\prime} \mathrm{N}$-Longitude $90^{\circ} 43^{\prime} \mathrm{F}$-Altitade above M.S.L. 21 feet

| Mouth | Air Temperature |  |  |  |  | Precipitation |  |  |  | Wind |  | Heating Factor <br> DegreeDay: Below $65^{\circ} \mathrm{F}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Mean | Mean Daily Maxt- mum | Mean Daily Minimum | Higbest Recorded | Lowest Recorded | Rain | Snow | Total (Water) | Maxi- <br> mum <br> in 24 <br> Houra | Most <br> Prevalent Direction | Average Speed |  |
|  | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\bullet} \mathrm{F}$ | ${ }^{\bullet} \mathrm{F}$ | in. | in. | in. | in. |  | m.p.h. | No. |
| Jan.. | -24.4 | -17.5 | -31.3 | 31 | -60 | 0 | 2.9 | 0.29 | 0.40 | N | 15.3 | 2,784 |
| Feb. | -25.0 | -18.4 | -31.6 | 31 | -57 | 0 | 1.9 | 0.19 | 0.15 | N | 14.2 | 2.559 |
| Mar.... | -12.1 | -4.2 | -19.8 | 30 | -52 | 0 | 2.9 | 0.29 | 0.33 | N | 12.8 | 2,440 |
| Apr..... | 3.5 | 12.4 | -5.5 | 42 | $-38$ | 0 | 4.2 | 0.42 | 0.30 | N | 13.2 | 1.878 |
| May.... | 22.3 | 27.8 | 16.7 | 45 | -17 | 0.13 | 2.8 | 0.41 | 0.44 | N | 14.9 | 1,361 |
| June.... | 37.2 | 42.9 | 31.5 | 81 | 5 | 0.88 | 0.8 | 0.96 | 0.76 | N | 11.8 | 849 |
| July.... | 47.7 | 55.4 | 39.9 | 84 | 26 | 1.64 | 0 | 1.64 | 0.85 | N | 11.7 | 530 |
| Auc.... | 47.8 | 53.8 | 41.7 | 86 | 27 | 1.70 | 0 | 1.70 | 1.19 | N | 13.0 | 549 |
| Sept.... | 37.1 | 40.9 | 33.2 | 67 | 9 | 1.53 | 1.3 | 1.66 | 1.33 | N | 15.2. | 840 |
| Oct..... | 21.7 | 26.7 | 16.6 | 49 | -22 | 0.43 | 5.4 | 0.97 | 0.61 | N | 17.1 | 1.345 |
| Nov.... | 1.2 | 8.0 | -5.6 | 49 | -38 | 0.01 | 5.1 | 0.52 | 0.34 | NW | 14.9 | 1,941 |
| Dec... | - 55.5 | -8.0 | -23.0 | 24 | -54 | 0 | 4.7 | 0.47 | 1.10 | N | 15.6 | 2.492 |
| Year... | 11.8 | 18.3 | 5.2 | 86 | - | 0.37 | 32.0 | 9.53 | 1.33 |  | 14.2 | 13,088 |
| Period | 1951-60 |  |  | 1821-60 |  | 1951-60 |  |  |  | 1951-60 |  | 1931-60 |

Climatic Data for Stations in the Canadian Arctic
Chyde
Latitude $70^{\circ} 27^{\prime} \mathrm{N}$-Longitude $68^{\circ} 33^{\prime} \mathrm{W}$-Altitude above M.S.L. to feet

| Month | Air Temperature |  |  |  |  | Precipitation |  |  |  | Wind |  | Heating <br> Factor <br> DegreeDays Below $65^{\circ} \mathrm{F}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Mean Daily | Mean Daily $\underset{\text { maxi- }}{\text { Maxi- }}$ mum | Mean Daily Minimum | Highest Recorded | $\begin{aligned} & \text { Lowest } \\ & \text { Re- } \end{aligned}$ corded | Rain | Snow | (Wotal | Maximum Fall in 24 Hours | Most Prevalent Direction | A verage Speed |  |
|  | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{9} \mathrm{~F}$ | ${ }^{6}$ | ${ }^{9} \mathrm{~F}$ | in. | in. | in. | in. |  | m.p.h. | No. |
| Jan..... | -17.0 | -10.1 | -23.8 | 32 | -49 | 1 | 4.3 | 0.43 | 0.73 | NW | 4.6 | 2,530 |
| Feb.... | -20.1 | $-12.7$ | -27.5 | 38 | -48 | 0 | 2.6 | 0.26 | 0.41 | NW | 7.4 | 2,390 |
| Mar.... | -15.7 | -7.2 | -24.1 | 28 | -45 | 1 | 2.0 | 0.20 | 0.21 | NW | 4.9 | 2,468 |
| Apr..... | 1.0 | 10.7 | -8.8 | 38 | -42 | 0 | 4.9 | 0.49 | 0.95 | NW | 4.7 | 1.965 |
| May.... | 20.9 | 28.8 | 13.0 | 48 | -14 | 1 | 5.4 | 0.54 | 0.30 | NW | 6.4 | 1,389 |
| June.... | 34.6 | 40.5 | 28.6 | 59 | 10 | 0.08 | 3.2 | 0.40 | 0.30 | NW | 8.0 | 984 |
| July.... | 40.5 | 47.3 | 33.6 | 71 | 22 | 0.52 | 3.6 | 0.88 | 1.28 | NW | 8.5 | 756 |
| Aug.... | 39.3 | 44.7 | 33.8 | ${ }^{68}$ | 22 | 1.16 | 1.5 | 1.31 | 1.47 | NW | 6.4 | 784 |
| Sept.... | 32.3 | 36.7 | 27.9 | 55 | 12 | 0.58 | 10.9 | 1,67 | 2.00 | NW | 8.1 | 984 |
| Oct..... | 20.2 | 25.0 | 15.3 | 42 | -13 | 1 | 12.4 | 1.24 | 0.84 | NW | 10.3 | 1.383 |
| Nov.... | -0.4 | 5.9 | $-6.7$ | 44 | -31 | 1 | 5.5 | 0.55 | 0.55 | NW | 7.0 | 1,902 |
| Dec.... | -14.1 | -7.9 | -20.2 | 25 | -47 | 1 | 1.7 | 0.17 | 0.37 | NW | 3.8 | 2,396 |
| Year... | 10.1 | 16.8 | 3.4 | 71 | -49 | 2.34 | 58.0 | 8.14 | 2.40 |  | 6.7 | 19,881 |
| Period. | 1951-66 |  |  | 1942-60 |  | 1951-60 |  |  |  | 1955-56 |  | 1942-60 |

${ }^{1}$ Average of less than 0.005 in .

Coppermink
Latitude $\mathbf{~ 7 7}^{\circ} 49^{\prime} \mathrm{N}$-Longitude $115^{\circ} 05^{\prime} \mathrm{W}$-Altitude above M.S.L. 28 feet

| Month | Air Temperature |  |  |  |  | Precipitation |  |  |  | Wind |  | Heating <br> Factor <br> Degree- <br> Days <br> Relow $65^{\circ} \mathrm{F}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Mean Daily | Mean <br> Daily <br> Maxi- <br> mum | Mean <br> Daily Minimum | Highest Recorded | Loweat Recorded | Rain | Snow | (Watal | Maxi- <br> mum <br> Fall <br> in 24 <br> Hours | Most <br> Prev. <br> alent <br> Direc- <br> tion | Average Speed |  |
|  | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | in. | in. | in. | in. |  | m.p.b. | No. |
| Jan.... | -20.3 | $-13.3$ | -27.2 | 27 | -54 | 0 | 2.8 | 0.28 | 0.13 | SW | 12.2 | 2,618 |
| Feb.... | -24.8 | -17.9 | -31.7 | 34 | -58 | 0 | 1.6 | 0.16 | 0.17 | W | 10.5 | 2,461 |
| Mar.... | -15.9 | -8.6 | $-23.1$ | 29 | -56 | 0 | 3.4 | 0.34 | 0.50 | SW | 9.2 | 2,465 |
| Apr..... | 1.1 | 9.9 | -7.8 | 46 | -47 | 0 | 2.7 | 0.27 | 0.30 | W | 8.7 | 1,920 |
| May.... | 22.1 | 28.7 | 15.4 | 74 | -24 | 0.05 | 2.2 | 0.27 | 0.50 | W | 8.5 | 1,336 |
| June.... | 37.4 | 43.2 | 31.6 | 82 | 5 | 0.44 | 1.4 | 0.58 | 0.39 | N | 8.5 | 807 |
| July.... | 48.0 | 55.0 | 41.0 | 87 | 31 | 0.94 | 0.6 | 1.00 | 0.64 | NE | 9.6 | 505 |
| Aug.... | 48.0 | 54.4 | 41.6 | 83 | 27 | 1.76 | 1 | 1.76 | 1.42 | NE | 10.0 | 555 |
| Sept.... | 36.9 | 41.4 | 32.3 | 79 | 7 | 0.77 | 1.4 | 0.91 | 0.72 | N | 11.0 | 852 |
| Oct..... | 19.9 | 25.1 | 14.7 | 57 | -28 | 0.11 | 6.6 | 0.77 | 0.42 | SW | 12.0 | 1,411 |
| Nov... | -4.0 | 2.6 | -10.6 | 36 | -42 | 0 | 5.2 | 0.52 | 0.27 | W | 11.0 | 2,087 |
| Dec... | -15.0 | -7.8 | -22.1 | 31 | -49 | 0 | 3.7 | 0.37 | 0.33 | SW | 10.3 | 2,480 |
| Year. | 11.1 | 17.7 | 4.5 | 87 | -58 | 4.07 | 31.6 | 7.23 | 1.48 |  | 19.1 | 19,484 |
| Period. | 1951-60 |  |  | 1030-60 |  | 1951-60 |  |  |  | 1951-60 |  | 1931-60 |

[^21]| $$ | 4 0 |  <br>  |  | 尔 |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} \stackrel{\rightharpoonup}{0} \\ \underset{\sim}{c} \\ \vdots \\ \hline \end{gathered}$ | ！ |  －NospoNWゅた ஸ゙ー oo $\infty$ iv ooninoiv | 40 | $\begin{aligned} & \text { تK } \\ & \text { E. } \\ & \text { E: } \end{aligned}$ | Air Temperature |
|  | $\begin{aligned} & \text { er } \\ & \text { er } \end{aligned}$ | 11， <br>  oncontuncorvom | 4 |  |  |
|  | 1 0 io |  |  |  |  |
| $\begin{aligned} & \stackrel{\rightharpoonup}{8} \\ & \stackrel{1}{1} \\ & \hline 8 \end{aligned}$ | 9 |  | 180 |  |  |
|  | $\begin{aligned} & 1 \\ & \underset{\&}{2} \end{aligned}$ |  | $4{ }^{10}$ |  |  |
| $\stackrel{4}{\circ}$ <br> $\stackrel{9}{5}$ <br> 8 | 客 | 0000 <br>  | 5 | $\begin{aligned} & \text { Wo } \\ & \text { 曾 } \end{aligned}$ |  |
|  | $\underset{\infty}{\stackrel{\rightharpoonup}{\infty}}$ | OOH．000－0001 कocinós w winvorio | $\xi$ | $\begin{aligned} & \text { पू } \\ & 0 \\ & 0 \end{aligned}$ |  |
|  | $\begin{aligned} & 20 \\ & 0 \\ & \hline 0 \end{aligned}$ | 000000000000 <br>  | E |  |  |
|  | $\underset{\sim}{6}$ | 000010000000 <br>  | $\xi$ |  |  |
| 谓 |  |  |  |  | K |
| $\stackrel{\rightharpoonup}{8}$ | $\begin{gathered} \theta_{0}^{2} \end{gathered}$ |  is ivoso os cio is ois os is | $\begin{aligned} & B \\ & \dot{0} \\ & \dot{0} \end{aligned}$ |  | 昌 |
| － | 等 | いNにー <br> －NONO <br>  | $z_{0}^{2}$ |  |  |



| $\stackrel{5}{4}$ | $\begin{aligned} & \text { rod } \\ & \text { B. } \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 4 \\ & \text { H } \\ & \text { H } \end{aligned}$ |  <br>  |  | 务 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { \$10 } \\ & 0 \\ & 0 \\ & \hline 0 \\ & 0 \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { B } \\ & \text { 응 } \\ & \end{aligned}$ | $\stackrel{5}{0}$ |  eriv io wio os os is viris es | － | $\begin{aligned} & \text { 芭荡 } \\ & \text { 荡 } \end{aligned}$ |  |
|  |  | $\underset{i}{*}$ |  <br> －जnoocis onvirio | 400 |  |  |
| $\begin{aligned} & \circ \\ & \dot{0} \\ & \vdots \\ & 5 \end{aligned}$ |  | $\stackrel{m}{a}$ | $\stackrel{1}{N}$ $\infty$ ocioso oo ivis $\infty$－os | 90 |  |  |
|  | $\stackrel{\circ}{\circ}$ <br> $\stackrel{\circ}{8}$ <br> 8 | $\stackrel{\rightharpoonup}{6}$ |  |  |  |  |
|  |  | $\stackrel{I}{\bullet}$ |  | -10 |  |  |
|  | $\begin{aligned} & \stackrel{\rightharpoonup}{6} \\ & \stackrel{6}{8} \end{aligned}$ | $\begin{aligned} & \mathscr{O} \\ & \stackrel{E}{6} \end{aligned}$ | ○ロールーㅇ －刃iningivinioooo |  | $\begin{aligned} & \text { \% } \\ & \text { © } \\ & \text { O. } \end{aligned}$ |  |
|  |  | $\stackrel{\mathscr{6}}{\underset{i}{4}}$ | —ヵった <br>  | 5 | $\begin{aligned} & \text { W } \\ & 0 \\ & 0 \end{aligned}$ |  |
|  |  | $\stackrel{\stackrel{\rightharpoonup}{\circ}}{\stackrel{\rightharpoonup}{e}}$ | 00ットールー00000 <br>  | ! |  |  |
|  |  | $\stackrel{5}{8}$ | 000010000000 <br>  | E |  |  |
|  | $\begin{aligned} & \stackrel{\rightharpoonup}{0} \\ & \frac{1}{3} \\ & \hline 8 \end{aligned}$ |  |  |  |  | 岩 |
|  |  | $\stackrel{\substack{6 \\ \infty \\ \hline}}{ }$ | いんいいだ心たいいいたた जivè vio io wivincici－ | $\begin{aligned} & \text { B } \\ & \dot{0} \\ & \dot{!} \end{aligned}$ |  |  |
|  | $\begin{aligned} & \stackrel{\rightharpoonup}{4} \\ & \stackrel{\rightharpoonup}{\circ} \end{aligned}$ |  | NN，NMN | $\stackrel{7}{0}$ |  |  |

$\begin{array}{lr}\text { Climatic Data for Stations in the Canadian Arctic } \\ \text { Coral Harbour } & \text { Latitude } 64^{\circ} 12^{\prime} \mathrm{N} \text {－Longitude } 83^{\circ} 22^{\prime} \mathrm{W} \text {－Altitud }\end{array}$

## Climatic Data for Stations in the Canadian Arctic

Frobisher Pay
Latitude $63^{\circ} 45^{\prime} \mathrm{N}$-Longitude $68^{\circ} 33^{\prime} \mathrm{W}$-Altitude above M.S.L. 68 feet

| Month | Air Temperature |  |  |  |  | Precipitation |  |  |  | Wind |  | Heating <br> Factor $\qquad$ <br> DegreeDays Below $65^{\circ} \mathrm{F}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Mean Drily | Mean <br> Daily <br> Maxi- <br> mam | Mean <br> Daily <br> Mini- <br> mum | Highest Recorded | Lowest Recorded | Rain | Snow | $\left\lvert\, \begin{gathered} \text { Total } \\ \text { (Water) } \end{gathered}\right.$ | Maxi- <br> mum <br> Fall <br> in 24 <br> Hours | Most <br> Prevalent Direction | Average Speed |  |
|  | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{6} \mathrm{~F}$ | in. | in. | in. | in. |  | m.p.h. | No. |
| Jan..... | -14.9 | -7.7 | -22.1 | 39 | -49 | 0.03 | 12.4 | 1.27 | 1.60 | NW | 9.1 | 2,502 |
| Feb... | $-12.7$ | $-4.7$ | -20.6 | 38 | -49 | 1 | 13.8 | 1.38 | 0.99 | NW | 9.5 | 3,229 |
| Mar... | -6.1 | 2.5 | $-14.7$ | 39 | -43 | 1 | 9.4 | 0.94 | 0.94 | NW | 9.7 | 2,223 |
| Apr..... | 8.3 | 16.9 | -0.3 | 41 | -29 | 0.11 | 8.8 | 1.02 | 0.71 | NW | 11.0 | 1,728 |
| May.... | 28.0 | 33.7 | 22.3 | 56 | -15 | 0.15 | 6.8 | 0.83 | 0.54 | NW | 13.4 | 1,197 |
| June.... | 39.0 | 44.6 | 33.4 | 71 | 17 | 1.39 | 2.6 | 1.65 | 1.01 | SE | 11.7 | 795 |
| July.... | 48.6 | 53.4 | 39.7 | 76 | 30 | 2.76 | 0 | 2.76 | 1.54 | SE | 8.7 | 583 |
| Aug..... | 44.8 | 50.7 | 38.5 | 74 | 30 | 2.28 | 0.2 | 2.30 | 1.33 | SE | 8.9 | 639 |
| Sept.... | 38.8 | 41.4 | 32.1 | 58 | 5 | 1.10 | 3.9 | 1.49 | 0.87 | NW | 11.5 | 870 |
| Oct..... | 23.0 | 23.1 | 17.8 | 45 | -6 | 0.19 | 15.0 | 1.69 | 0.74 | NW | 14.6 | 1,287 |
| Nov.... | 7.2 | 14.1 | 0.3 | 42 | -32 | 0.06 | 15.0 | 1.56 | 1.10 | NW | 12,3 | 1.656 |
| Dec.... | $-7.0$ | 0.8 | -14.7 | 36 | -44 | 1 | 11.0 | 1.10 | 0.86 | NW | 11.0 | 2,167 |
| Year... | 16.1 | 22.8 | 9.3 | 76 | -4* | 8.10 | 98.9 | 17.38 | 1. 80 |  | 11.0 | 17,876 |
| Period. |  | 1051-60 |  | 1942 | -60 |  |  | 1-60 |  | 195 | -60 | 1948-60 |

${ }^{2}$ Average of less than 0.005 in .

Holman
Latitude $70^{\circ} 30^{\prime} \mathrm{N}$-Longitude $117^{\circ} 3^{\prime} \mathrm{W}$-Altitude above M.S.L. 30 feet

| Month | Air Temperature |  |  |  |  | Precipitation |  |  |  | Wind |  | Heating Factor |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Mean | Mear <br> Daily <br> Maxi- <br> mum | Mean Daily Mininoum | $\left\{\begin{array}{l} \text { Highest } \\ \text { Re- } \\ \text { corded } \end{array}\right.$ | Lowest Recorded | Rain | Snow | Total (Water) | Maximum Fall in 24 Hours | Most Prevalent Direction | Average Speed | DegreeDays Below $65^{\circ} \mathrm{F}$ |
|  | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathbf{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{8} \mathrm{~F}$ | ${ }^{\circ} \mathrm{F}$ | in. | in. | in. | in. |  | m.p.h. | No. |
| Jan..... | $-20.0$ | -14.0 | -25.9 | 20 | -45 | 0 | 2.9 | 0.29 | 0.15 | E | 9.1 | 2,610 |
| Feb.... | -25.7 | -19.4 | -32.0 | 28 | $-50$ | 0 | 1.2 | 0.12 | 0.10 | E | 7.9 | 2.508 |
| Mar... | -16.4 | -9.8 | $-23.0$ | 24 | -48 | 0 | 2.1 | 0.21 | 0.25 | E | 9.5 | 2,474 |
| Apr..... | 1.3 | 8.9 | -6.3 | 40 | -35 | 0 | 3.6 | 0.36 | 0.82 | E | 11.5 | 1,835 |
| Mry.... | 20.9 | 26.5 | 15.3 | 54 | $-13$ | 0.06 | 1.5 | 0.21 | 0.19 | E | 10.3 | 1,358 |
| June.... | 39.0 | 44.9 | 33.1 | 71 | 13 | 0.26 | 0.6 | 0.32 | 0.56 | E | 9.5 | 789 |
| July.... | 45.5 | 52.4 | 38.5 | 78 | 27 | 0.87 | 0.2 | 0.89 | 0.99 | W | 8.7 | 611 |
| Aug..... | 44.8 | 50.8 | 38.8 | 75 | 24 | 0.80 | 0.4 | 0.84 | 0.70 | E | 8.9 | 660 |
| Sept.... | 33.3 | 37.2 | 29.3 | 63 | 8 | 0.44 | 3.8 | 0.82 | 0.40 | $\underset{\text { E }}{ }$ | 11.7 | 968 |
| Oct..... | 15.8 | 20.5 | 11.0 | 42 | $-13$ | 0.08 | 6.0 | 0.66 | 0.32 | E | 13.1 | 1,516 |
| Nov.... | -5.0 | -0.1 | $-9.9$ | 28 | $-38$ | 0 | 3.0 | 0.30 | 0.23 | E | 15.6 | 2,067 |
| Dec... | $-15.2$ | -9.9 | $-20.4$ | 19 | $-48$ | 0 | 2.4 | 0.24 | 0.23 | $\underset{\sim}{\mathbf{E}}$ | 11.2 | 2.434 |
| Tear... | 8.9 | 15.7 | 4.4 | 78 | -5t | 2.48 | 27.7 | 5.26 | -.98 |  | 13.3 | 18, 825 |
| Period. |  | 1951-60 |  | 1941 | -60 |  |  | 1-60 |  | 195 | -60 | 1941-60 |


| $5$ |  | $4$ |  |  | 年 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { 茹 } \\ & \text { 8 } \end{aligned}$ | \％ |  | भ10 | 易䈍 |  |
| $\begin{aligned} & \text { W} \\ & \text { E } \\ & \text { 蓓 } \end{aligned}$ |  | $\pm$ |  | $\stackrel{\circ}{9}$ |  |  |
|  |  | $\begin{aligned} & 1 \\ & \vdots \\ & \vdots \end{aligned}$ |  | n |  |  |
|  | $\begin{aligned} & \stackrel{\rightharpoonup}{\stackrel{\rightharpoonup}{0}} \\ & \text { 官 } \end{aligned}$ | E |  | 4 | 为菏 |  |
|  |  | ${ }_{6}$ |  | － |  |  |
|  | $\begin{aligned} & \overline{9} \\ & \text { 曾 } \end{aligned}$ | $\stackrel{5}{4}$ | 9000 $00-$－2959－ 0000 | 5 |  |  |
|  |  | \％ |  | ? | $\begin{aligned} & \text { 皆 } \\ & \stackrel{y}{4} \end{aligned}$ |  |
|  |  | 遌 | 000000000000 <br>  | $e^{\prime}$ |  |  |
|  |  | $\stackrel{5}{\text { ¢ }}$ | $0000-0000000$ <br>  | $\ddot{\square}$ |  |  |
|  | $\begin{aligned} & \text { eb } \\ & \text { 管 } \end{aligned}$ |  |  |  |  | 品 |
|  |  |  |  Viowomioóviniono | 名 |  |  |
|  |  |  |  | $\stackrel{3}{3}$ |  |  |



Climatic Data for Stations in the Canadian Aretic
Notingham Iaband
Latitude $63^{\circ} 07^{\prime} \mathrm{N}$-Longitude $77^{\circ} 56^{\prime} \mathrm{W}$-Altitude above M.S.L. 54 feet

| Montb | Air Temperature |  |  |  |  | Precipitation |  |  |  | Wind |  | Heating <br> Factor <br> Degree- <br> Days <br> Below $65^{\circ} \mathrm{F}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\underset{\text { Mean }}{\text { Daily }}$ | Mean <br> Daily Maxi- mum <br> mum | Mean Daily Mini- mum | Highest Recorded | Lowest Recorded | Rain | Snow | Total (Water) | Maxi- <br> murn Fall in 24 Hours | Most <br> Prevglent Direction | Average Speed |  |
|  | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathbf{F}$ | in. | in. | in. | in. |  | m.p.h. | No. |
| Jan. | -11.9 | -5.8 | -18.0 | 32 | -38 | 0 | 4.7 | 0.47 | 0.43 | NW | 10.9 | 2.412 |
| Feb..... | -10.5 | -3.9 | -17.1 | 32 | -42 | 0 | 3.1 | 0.31 | 0.31 | NW | 11.5 | 2.201 |
| Mar..., | -2.3 | 5.4 | -10.0 | 34 | -40 | 0 | 2.5 | 0.25 | 0.30 | NW | 9.9 | 2,130 |
| Apr..... | 11.3 | 19.0 | 3.6 | 43 | $-26$ | 0 | 4.6 | 0.45 | 0.25 | NE | 11.5 | 1. 653 |
| May.... | 26.0 | 31.3 | 20.7 | 47 | -8 | 0.13 | 4.7 | 0.60 | 0.44 | NE | 11.2 | 1,237 |
| June.... | 36.4 | 42.1 | 30.6 | 65 | 10 | 0.93 | 2.8 | 1.21 | 1.59 | NE | 10.7 | 885 |
| July.... | 43.3 | 30.2 | 36.4 | 73 | 25 | 1.59 | 0.1 | 1.60 | 1.25 | W | 9.8 | 688 |
| Aug.... | 43.2 | 49.2 | 37.1 | 69 | 22 | 1.92 | 0 | 1.92 | 1.15 | NE | 11.1 | 698 |
| Sopt.... | 35.2 | 39.5 | 30.9 | 61 | 13 | 1.37 | 5.4 | 1.91 | 2.17 | NW | 10.9 | 900 |
| Oct... | ${ }^{25.0}$ | 29.1 | 20.8 | 52 | ${ }_{-2}$ | 0.38 | 11.3 | 1.51 | 1.24 | NW | 14.5 | 1.218 |
| Nov... | 12.0 -3.3 | 17.6 | 6.3 -9.7 | ${ }_{31}^{40}$ | -21 -36 | 0.03 | 9.8 | 1.01 | 0.70 0.60 | N | 13.0 11.6 | 1.587 |
| Dec.... | -3.3 | 3.2 | -9.7 | 31 | $-36$ | 0 | 5.5 | 0.55 | 0.60 | N | 11,6 | 2,006 |
| Year... | 17.0 | 23.1 | 11.4 | 73 | -42 | 6.35 | 54.4 | 11.79 | 2.17 |  | 11.4 | 17,765 |
| Period. | 1951-60 |  |  | 1928-60 |  | 1951-60 |  |  |  | 1951-60 |  | 1931-60 |

Resoldte
Latitude $74^{\circ} 43^{\prime} \mathrm{N}$-Longitude $94^{\circ} 59^{\prime} \mathrm{W}-$ Altitude above M.S.L. 209 feet

| Month | Air Temperature |  |  |  |  | Precipitation |  |  |  | Wind |  | Heating <br> DegreeDays Below $65^{\circ} \mathrm{F}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Mean | Mean Daily Maxi- mum | Mean Daily Mini- mum | Highest Recorded | Lowest Recorded | Rain | Snow | (Wotal | Maxi- <br> muth <br> Falt <br> in 24 <br> Hours | Most <br> Prevalent Direc. tion | Average Speed |  |
|  | ${ }^{\circ} \mathrm{F}$ | ${ }^{4} \mathrm{~F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | ${ }^{\circ} \mathrm{F}$ | in. | in. | in. | in. |  | m.p.b. | No. |
| Jan., | -25.3 | -18.7 | -31.8 | 23 | -53 | 0 | 1.0 | 0.10 | 0.08 | NW | 11.9 | 2.830 |
| Feb... | -28.6 | -22.2 | $-35.0$ | 7 | -57 | 0 | 1.1 | 0.11 | 0.07 | E | 11.5 | 2.678 |
| Mar.... | -24.6 | -18.2 | -31.0 | 20 | -61 | 0 | 1.0 | 0.10 | 0.09 | NW | 10.4 | 2.768 |
| Apr.... | $-7.7$ | -0.4 | $-15.0$ | 30 | $-40$ | 1 | 2.4 | 0.24 | 0.20 | NW | 10.9 | $\stackrel{2.217}{ }$ |
| Jay.... | 13.6 38.0 | 19.1 | ${ }_{28.8}^{8.1}$ | 40 | -20 | 0.3 | 2.9 | 0.29 | 0.10 0.77 | NW | 11.6 | 1,597 |
| July.... | 40.3 | 45.1 | 35.4 | 61 | 28 | 0.80 | 0.4 | 0.84 | 0.86 | NW | 12.1 | 766 |
| Aug.... | 37.3 | 41.4 | 33.2 | 69 | 17 | 1.22 | 1.1 | 1.83 | 0.99 | NW | 12.3 | 856 |
| Sept.... | 24.1 | 27.6 | 20.6 | 48 | 0 | 0.13 | 4.8 | 0.61 | 0.25 | NW | 12.5 | 1,233 |
| Oet..... | 5.7 | 11.2 | 0.1 | 32 | -30 | 1 | 6.4 | 0.64 | 0.37 | NW | 12.5 | 1,835 |
| Nov. | -12.9 | -6.8 | -19.0 | 27 | -43 | 0 | 2.2 | 0.22 | 0.14 | NW | 11.0 | 2,292 |
| Dec. | -20.8 | -14.5 | -27.0 | 17 | -51 | 0 | 2.0 | 0.20 | 0.08 | NW | 10.4 | 2.641 |
| Year.. | 2.8 | 8.4 | -2.7 | 61 | -61 | 2.45 | 28.8 | 5.13 | 0.98 |  | 11.6 | 22,673 |
| Period. | 1051-80 |  |  | 1948-60 |  | 1951-60 |  |  |  | 1951-60 |  | 1947-60 |

[^22]| $5$ |  | $\begin{aligned} & \text { 4 } \\ & \text { \# } \end{aligned}$ |  |  | 掝 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { ్/ } \\ & \text { ⿷匚 } \\ & \circ \\ & \hline 0 \end{aligned}$ | $\begin{aligned} & \text { "్ట్ర } \\ & 1 \\ & \text { O } \end{aligned}$ | $\stackrel{0}{i}$ |  | $4{ }^{10}$ | $\begin{aligned} & \text { 芭々 } \\ & \text { 훈: } \end{aligned}$ |  |
|  |  | $\stackrel{\leftarrow}{6}$ |  | 옹 |  |  |
| $\begin{aligned} & \circ \\ & \text { O. } \\ & \vdots \\ & \hline 1 \end{aligned}$ |  | io |  | 억 |  |  |
|  |  | 9 |  | ๙1 |  |  |
|  |  | $\stackrel{1}{\omega}$ |  | 옹 |  |  |
|  |  | $\stackrel{\leftarrow}{\circ}$ | 00000 <br>  | E＇ | $\begin{aligned} & \text { 第 } \end{aligned}$ |  |
|  |  | $\stackrel{6}{6}$ |  <br>  | B | $\begin{aligned} & 02 \\ & 0 \\ & \hline 0 \end{aligned}$ |  |
|  |  | $$ | 000001000000 <br>  | $\xi^{\prime}$ | $\qquad$ |  |
|  |  | $\stackrel{\circ}{\circ}$ | 000000000000 <br>  | $E$ |  |  |
|  |  |  | xxxxyyzzz |  |  | 콜 |
|  |  | $\stackrel{\rightleftarrows}{\ddot{0}}$ |  －O invinimosivios io | 锟 |  |  |
|  |  | ： | $::: ~: ~: ~: ~$ | $\stackrel{3}{2}$ |  | 問菬 |



| $\begin{aligned} & 0 \\ & 0 \\ & 0.0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \text { 4 } \\ & \text { 8 } \end{aligned}$ | 붕융무으․ |  | \％ O － |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \stackrel{\rightharpoonup}{6} \\ & 5 \\ & \hline \text {, } \end{aligned}$ | $\sum_{20}^{20}$ |  －ivoocoivinooin | 40 | 旨号 |  |
|  | なった |  <br>  | （1） |  |  |
|  | $\stackrel{\rightharpoonup}{i}$ |  ósioincosiosisiver | 40 |  |  |
| $\begin{aligned} & \text { "్ర్ర } \\ & \text { (0 } \end{aligned}$ | 9 | Wibutios | （1） |  |  |
|  | \＆ |  | 4 |  |  |
| $\begin{gathered} \text { \% } \\ \stackrel{0}{5} \\ \hline 8 \end{gathered}$ | $\stackrel{\square}{+\infty}$ | 0001－1－000000 <br>  | $\mathfrak{G}$ | 覴 |  |
|  | $\underset{+\infty}{\stackrel{+}{\infty}}$ |  ciosion 00＇rioioós | $5$ | $\begin{aligned} & \text { \% } \\ & \text { : } \end{aligned}$ |  |
|  | $\begin{aligned} & \text { F } \\ & \text { 宸 } \end{aligned}$ | 0－4－R－－ 00000 <br>  | $\mathfrak{3}$ |  |  |
|  | 운 | 000－0－000000 <br>  | $!^{\circ}$ |  |  |
| $\begin{aligned} & \text { ". } \\ & \frac{5}{5} \\ & \hline 8 \end{aligned}$ |  |  |  |  | 年 |
|  | $\stackrel{\circ}{\circ}$ |  <br>  | $\begin{aligned} & 1 \\ & \hline \\ & 0 \\ & 0 \\ & \hline \end{aligned}$ | いて |  |
| 䔍 | $\begin{aligned} & \text { じ } \\ & \text { ※is } \end{aligned}$ |  | $\stackrel{\square}{\square}$ |  |  |





## Section 2.-Meteorological Observing Stations

In January 1966, official meteorological observations were taken and recorded at 2,313 weather reporting stations in Canada. There are several different classes of stations ranging from the first-order reporting stations at airports where hourly observations of all aspects of the weather are recorded, to the co-operative observing stations where a volunteer observer makes daily observations of rainfall, snowfall and temperature or precipitation only. While there are vast areas of the country where the weather stations are several hundred miles apart, most of the settled parts of the country are represented by first-order hourly reporting stations every 100 miles or so, and by co-operative climatological observing stations at least every 25 miles.

At most of the 274 first-order synoptic stations complete weather observations are made every six hours and at a large percentage of them only slightly less complete observations for aviation forecasts are made every hour. These weather data, including information on temperature, precipitation, pressure, wind, humidity, cloud and visibility, are sent first by radio and teletype to the different weather offices across the Continent to be used for weather forecasting purposes, and then at each month-end the manuscript reports are sent by mail to Meteorological Branch Headquarters for use in compiling climatic statistics. At 101 of these observing stations, personnel of the Telecommunications Branch of the Department of Transport take weather observations as part of their scheduled duties, and 28 stations are operated in a similar manner by the different Armed Services; 93 stations are operated by Meteorological Branch personnel and the remainder are operated under contract, or by co-operative arrangement with various transportation and communications companies.

A specially designed transport aircraft, recently placed in service by the Basic Weather Division of the Meteorological Branch, Department of Transport, is opening a new era in air reconnaissance of ice conditions in the Arctic; the aircraft, with another to be added later, will place Canada in the forefront in this field.


The Canadian project is being undertaken with a view to improving summer navigation in the Arctic, winter navigation on the St. Lawrence River and Gulf, and Great Lakes navigation during freeze-up.

Twice daily, at 34 locations throughout the country, complete upper air observations are made from the surface to altitudes upwards to 100,000 feet. Pressure, temperature and humidity measurements are determined by radiosonde instruments carried aloft by ballown and the information reported by radio to the ground receiving stations; winds are determined by observing the drift of the balloon by means of radar or radio direction finding ground equipment. There are also 30 locations where the winds in the lower layers of the atmosphere are determined by observing free balloon drift by means of a theodolite or by radar. As in the case of the first-order synoptic reporting stations, these upper air weather observations are made available immediately to forecast offices for weather forecasting purposes, and the manuscript reports are collected at Meteorological Branch Headquarters for complation of climatic statistics.

There are 1,366 weather observing stations in Canada classified as climatological stations where the observers record temperature extremes and precipitation once or twice daily and sead in monthly data sheets. Most of the observers serve on a voluntary basis and willingly spend several hours a month on their hobby. In addition, many governmental and industrial organizations such as agricultural experimental farms and power companies have incorporated brief climatological duties into the general work of some of their employees. These climatological stations have contributed much useful information on temperature and precipitation for publication by the Meteorological Branch.

There are 574 stations classified as precipitation stations where rainfall and snowiall only are observed and recorded. Since precipitation varies more rapidly than temperature over short distances, a dense network of these stations is required, especially in large urban areas. Finally, there are 99 miscellaneous stations where observations of wind, sunshine and temperature are taken for special purposes. In all, the number of weather stations in Canada has been growing at an average rate of more than 100 a year for the past decade and thus a steadily increasing climatic inteligence is assisting Canadians in all economic pursuits.

## Section 3.-Standard Time and Time Zones

Standard Time, which was adopted at a World Conference held at Washington, D.C., in 1884, sets the number of time zones in the world at 24 , each zone ideally extending over one twenty-fourth of the surface of the earth and including all the territory between two meridians $15^{\circ}$ of longitude apart. In practice, the zone boundaries are quite irregular for geographic and political reasons. Universal Time (UT) is the time of the zone centred on the zero meridian through Greenwich. Each of the other time zones is a definite number of hours ahead of or behind UT to a total of 12 hours, at which limit the international dateline runs roughly north-south through the mid-Pacific.

Canada has seven time zones, the most easterly being Newfoundland Standard Time, three hours and thirty minutes behind UT. In the west, Yukon Standard Time, which is used througbout Yukon Territory, is nine hours behind UT. In between, from east to west, the remaining zones are called Atlantic, Eastern, Central, Mountain and Pacific Standard Time.

Legal Authority for the Time Zones.-Time in Canada has been considered a matter of provincial rather than federal jurisdiction. Each of the provinces and the Northwest Territories has enacted laws governing the standard time to be used within its boundaries. These laws determine the location of the time zone boundaries. Lines of communication, however, have caused communities near the boundary of a time zone to adopt the time of the adjacent zone, and in most cases these changes are acknowledged by
amendments to provincial legislation. During the two World Wars, there were federal enactments concerning time but these were of temporary duration. In 1941 the Dominion Observatory time was declared the time to be used for official purposes in Canada.


Daylight Saving Time.-Although Daylight Saving Time had been urged in many quarters before World War I, its first use in Canada came as a federal war measure in 1918. Today most of the provinces have legislation controlling the provincial or municipal adoption (or rejection) of Daylight Saving. In the remaining provinces it is necessary to refer to the individual municipalities to determine whether, and between what dates, Daylight Saving is adopted in any particular year.

## CHAPTER II.-CONSTITUTION AND GOVERNMENT*

CONSPEGTUS

Page
Page Page
Part I, Constitution of Canada ..... 78
Part II.-Machinery of Government ..... 83
Section 1. The Federal Government. ..... 83
Subsection 1. The Executive ..... 84
Subsection 2. The Legislature ..... 90
Subsection 3. The Judiciary ..... 103
Section 2. Provincial and Terratorial Governments ..... 105
Subsection 1. Newfoundland ..... 106
Subsection 2. Prince Edward Island ..... 107
Subsection 3. Nova Scotis ..... 108
Subsection 4. New Brunswick ..... 109
Subsection 5. Quebec ..... 110
Subsection 6. Ontario ..... 112
Subsection 7. Manitoba ..... 113
Subsection 8. Saskatchewan. ..... 114
Subsection 9. Alberta ..... 115
Subsection 10. British Columbia. . ..... I16
Subsection 11. Yukon Territory and Northwest Territories ..... 117
Section 3. Municipal Government ..... 119
Section 4. Federal and ProvincialRoyal Commissions
Part III.-Administrative Functions of
the Federal Government. ..... 125
Section l. Financial Adminietration ..... 125
Section 2. Departments, Boardg, Соы- MISAIONS, ETC..... ..... 130
Section 3. Crown Corporations ..... 142
Section 4. Act年Adinigtered by Federal DEPARTMENTS. ..... 151
Part IV.--Federal and Provincial Govern- ment Employment. ..... 156 ..... 56
Part V.-Canada's External Relations ..... 163
Section 1. Diplomatic Reprebentation aB at JUNE 30, 1966 ..... 164
Section 2. International Activitieg, 1985-66 ..... 170
Subsection 1. Canada and Commonwealth Relations ..... 170
Subsection 2. Canada and the United Natione ..... 17I
Atlantic Treaty Organization ..... 176Natione....................
Subsection 3. Cansda and the North
Subsection 4, Canadian External Aid Programs. . . . . ..... 178
Subsection 5. Organization for Economic Co-operation and Development. ..... 181

> The interpretation of the symbols used in the tables throughout the Year Book will be jound on $p$. viii of this wolume.

## PART I.-CONSTITUTION OF CANADA

The Canadian federal state, which today comprises ten provinces and two vast northern territories, had its beginning one hundred years ago in the enactment (Mar. 29, 1867) by the British Parliament of the British North America Act, 1867. Fashioned largely out of the Seventy-two Resolutions drafted at Quebec (1864) by the Fathers of Confederation, the British North America Act, 1867 provided for the federal union of the three British North American provinces (Canada, New Brunswick and Nova Scotia) in one Dominion under the name of "Canada"

[^23]Although the new nation that came into being on July 1, 1867 was a federation comprised of four provinces, namely, Ontario, Quebec, New Brunswick and Nova Scotia, Sect. 146 of the Act provided for the admission into the Union of the Crown colonies of Prince Edward Island and Newfoundland on the Atlantic and the united (1866) island and mainland colony of British Columbia on the Pacific, and also of the vast expanse of Hudson's Bay Company territory in the North West known as "Rupert's Land and the North-Western Territory" Following the negotiation of an agreement on terms comprising the Company's surrender of its authority and territories to the Crown (which was to transfer them at once to Canada) and the retention of one twentieth of the land of the fertile belt (the southern territories) with designated blocks of land around its trading posts and a Canadian cash payment of $£ 300,000$, the new nation of Canada was ready to expand westward with considerable momentum across the Continent to the Pacific.

The acquisition by Canada of Rupert's Land and the North-Western Territory enabled the Red River settlement, after a few months of disturbance, to receive limited provincial establishment under the name of "Manitoba" in 1870; provided the Federal Government with the public lands needed to help subsidize a transcontinental railway linking the Pacific with the Canadian East, thereby fulfilling the pledge to British Columbia to begin the Canadian Pacific Railway within two years and to complete it within ten years of the date of union, July 20, 1871; and laid, through the provision of millions of acres of public lands, the land and economic bases for the Federal Government's adoption of a freehomestead policy for the Canadian prairies that, in conjunction with the completion of the Canadian Pacific Railway and the launching of other railway lines, brought wave after wave of settlers into the Northwest Territories in such numbers as to justify the creation of the two Provinces of Saskatchewan and Alberta in 1905 out of the portion of the Northwest Territories south of the 60th parallel of north latitude. Although provision for their entry was included in the British North America Act, 1867, the Province of Prince Edward Island held back from the Union until 1873 and Newfoundland became Canada's tenth province on Mar. 31, 1949.

The Constitution of Canada, which had a corporate beginning in 1867, combines, in a set of rules determining the creation and operation of the machinery or institutions of government, the Cabinet system of responsible government (based on an inheritance from Britain) with a Canadian adaptation of federalism (as then practised in the United States for eighty years). A written document, the British North America Act of 1867, contains a substantial portion of Canada's Constitution and this Act, with its various amendments,* is popularly held to be the Canadian Constitution. There is, however, another and perhaps more important part which appears, through the evolutionary processes of historical growth, in various guises including well-established usages and conventions found in the unwritten provisions of the Constitution.

Thus, the British North America Act is not a comprehensive constitutional document presenting an exhaustive statement of fundamental laws and rules by which Canada is governed. The Constitution of Canada in its broadest sense includes other British statutes (such as the Statute of Westminster, 1931) and Orders in Council (notably those admitting various provinces and territories to the federation), Statutes of the Parliament of Canada relating to such matters as the succession to the Throne, the Royal Style and Tities, the Governor General, the Senate, the House of Commons, the creation of courts, the establishment of government departments, the franchise, elections, and also statutes of

[^24]provincial legislatures relating to provincial constitutional institutions and government matters. Federal and provincial Orders in Council, legally authorized by their respective statutes, provide further constitutional material as do the decisions of the courts which interpret the British North America Act and all ordinary statutes and indeed possess the power to set aside any laws which they hold to be ultra vires or beyond the jurisdiction of the enacting legislative bodies, whether federal or provincial. Moreover, the Canadian Constitution comprises, in addition to the statutory law and its judicial interpretation, substantial sections of the common law, unwritten constitutional usages and conventions and principles of democratic government which were traniplanted from Britain over two hundred years ago and since then have been thriving and evolving in the Canadian environment. For example, the Cabinet system of responsible government (see pp. 85-86) and its functioning through close identification of the executive and the legielative powerg (that is, of the Cabinet and the House of Commons) is not mentioned in the British North America Act but derives from an unwritten convention of the Constitution.

Although the essential principles of Cabinet government are based in custom or constitutional usage, the federal structure of Canadian government rests on the explicit written provisions of the British North America Act. Apart from the creation of the federal union, the dominant feature of the Act and indeed of the Canadian federation was the distribution of powers between the central or federal government on the one hand and the component provincial governments on the other. In brief, the primary purpose was to grant to the Parliament of Canada legislative jurisdiction over all subjects of general or common interest, while giving to the provincial legislatures jurisdiction over all matters of local or particular interest (see p. 90 and pp. 105-106).

Unlike the written constitutions of many nations, the British North America Act lacks comprehensive "bill of rights" clauses, although it does accord specific constitutional protection to the use of the English and French languages (clause 133) and special safeguards with respect to sectarian or denominational schools. Such vital rights as freedom of speech, freedom of assembly, freedom of religion, freedom of the press, trial by jury and similar liberties enjoyed by the individual citizen are not recorded in the British North America Act but rather depend on the statute law and the common law inheritance. Security of these rights was confirmed by the passage of a Canadian Bill of Righto-An Act for the Recognition and Protection of Human Rights and Fundamental Freedorna (SC 1960, c. 44), assented to Aug. 10, 1960. (See also Chapter IX, Sect. 1 on Canadian Criminal Law and Procedure.)

Treaty-Making Powers.*-The Federal Government has exclusive responsibility for the conduct of external affairs as a matter of national policy affecting all Canadians. The policy of the Federal Government in discharging this responsibility is to seek to promote the interest of the entire country and of all Canadians of the various provinces within the over-all framework of the national policy.

In respect of matters of specific concern to the provinces of Canada, it is the policy of the Canadian Government, in a spirit of co-operative federalism, to do its utmost to assist the provinces in achieving the particular aspirations and goals that they wish to atiain The attitude of the Federal Government in this respect was illustrated by the "ersente" signed by representatives of Quebec and France in the field of education in February 1965. The Quebec and federal authorities co-operated actively in a procedure

[^25]that enabled the Province of Quebec, within the framework of the Constitution and the national policy, to participate in international arrangements in a field of particular interest to that province.

Thus, under existing procedures, the position is that, once it is determined that what a province wishes to achieve through agreements in the field of education or in other fields of provincial jurisdiction falls within the framework of Canadian foreign policy, the provinces may discuss detailed arrangements directly with the competent authorities of the country concerned. When a formal international agreement is to be concluded, however, the federal powers relating to the signature of treaties and the conduct of over-all foreign policy must necessarily come into operation.

The approach of the Canadian Government to the question of Canadian representation in international organizations of a social, cultural or humanitarian character reflects the same constructive spirit. It recognizes the desirability of ensuring that the Canadian representation in such organizations and conferences reflects in a fair and balanced way provincial and other interests in these subjects.

Amendment of the Constitution.--No provision was made in the British North America Act of 1867 for amendment thereof by any legislative authority in Canada but both the Parliament of Canada and the provincial legislatures were given legislative jurisdiction with respect to some matters relating to government. Thus, for example, the Parliament of Canada was given jurisdiction with respect to the establishment of electoral districts and election laws and the privileges and immunities of Members of the House of Commons and the Senate, and each provincial legislature was empowered to amend the constitution of the province except as regards the office of Lieutenant-Governor. By an amendment to the British North America Act passed in 1949, the authority of the Parliament of Canada to legislate with respect to constitutional matters was considerably enlarged and it may now amend the Constitution of Canada except as regards the legislative authority of the provinces, the rights and privileges of provincial legislatures or governments, schools, the use of the English or the French language, and the duration of the House of Commons other than in time of real or apprehended war, invasion or insurrection.

The question of devising amendment procedure within Canada which satisfies the need to safeguard or entrench such basic provincial and minority rights as are noted immediately above and yet possesses sufficient flexibility to ensure that the Constitution can be altered to meet changing circumstances is one that still engages the attention of the federal and provincial governments and legislatures, An outline of the constitutional background to the problem, an annotated list of the fourteen occasions since 1867 when amendments to the British North America Act were made by the United Kingdom Parliament, a concise review of the prolonged search for a satisfactory amending procedure in Canada-the subject of repeated consideration in the Parliament of Canada and in a series of formal federal-provincial conferences and meetings in the years 1927, 1935-36, 1950, 1960-61 and 1964-and, more specifically, the text of a draft Bill "to provide for the amendment in Canada of the Constitution of Canada" (accompanied by explanatory notes relating thereto) which embodies the amending procedure or formula unanimously recommended by the Conference of Attorneys-General and unanimously accepted by the Conference of the Prime Minister and the Premiers (October 1964) are all made available in an official publication entitled The Amendment of the Constitution of Canada, authorized by the Minister of Justice, February 1965.*

[^26]
## 1.-Provinces and Territories of Canada, Dates of Admission to Confederation, Legislatife Processes by which Admission was Effected. Present Area and Seat of Government


${ }^{1}$ The area of Ontario was extended by the Ontario Boundaries Extension Act, 1912 (SC 1912, e. 40 ).
: Extended by Quebec Boundarjes Extension Act, 1912 (SC 1912, c. 45 ) and diminished Mar. 1, 1927 in consequence of the Award of the Judicial Committee of the British Privy Council whereby approsimately 112,000 89. miles of territory (formerly considered as part of Quebec) was azaigned to Newfoundland.
${ }^{2}$ Extended by the Extension of Boundaries Act of Manitoba, 1881 and the Manitoba Boundaries Extension Act, 1912 (SC 1912, c. 32).

4 Saskatchewan and Alberta created as provinces in 1905 from the area formerly comprised in the provisional districta of Assiniboia, Atbabaska, Alberta and Saskatchewan established May 17, 1882 by minute of Canadian Privy Council concurred in by Domínion Parliament and Order in Conncil, Oct, 2, 1895.
${ }^{4}$ By an Iroperial Order in Council passed on June 23, 1870 pursuant to the Rupert's Land Act, 1868 (Br. Stat. 1868, c. 105), the former territories of the Hudson'a Bay Company known as Rupert's Land and the North-Weatern Territory were transterred to Canada effective July 15, 1870. These territories were designated as the North-Weat Territories by the Act of SC 1869. c, 3 and as the Northwest Territories by RSC 1906, e. 62 . By Imperial Order in Council of July 31. 1880 (effective Sept. 1, 1880), all British territories and posessions in North America not already included within Canada and all islands adjacent thereto (with the exception of the Colony of Newfoundland and ite dependencies) were annexed to Canada and these additional territories were formally included in the North. Weat Territories by SC 1905, c. 27. The Province of Manitoba was formed out of a portion of the territoriea by the Manitoba Act, 1870 (SC 1870, c. 3) and a further portion was added to Manitoba in 1881 by SC 1881, c. 14. The Provinces of Alberta and Saskatehewan were formed out of portions of the territories in 1905 and in 1912 other portions were added to Manitoba, Ontario and Quebec.

- By SC 1876, c. 21, a separate district to be known as the District of Keewatin was established and provision was made for the local government thereof. The Act was expressed to come into force by proclamstion. It provided that portions of the District night be re-annexed to the North-West Territories by proclamation; in 1886 a portion of the District of Keewatin was re-annexed and in 1905 the entire Keewatin District was re-annexed. The Act of 1876 was never proclaimed. By Order in Council of May 8. 1882 the provisional districts of Assinibois, Saskatchewan, Alberta and Athabaska were created for the convenience of settlers and for postal purposes. By Order in Council of Oct. 2, 1895 the further provisional districts of Ungava, Franklin, Mackenzie and Yukon were created. The boundaries of these provisional distriets were re-defined by Order in Council of Dec. 18, 1897. Sub-餀quently the Yukon Territory was formed, the Provinces of Alberta and Saskatchewan were created and other portiong of the territories were annexed to Quebec, Ontario and Manitoba. By Order in Council dated Mar. 16 , 1918 (effective Jan. 1, 1920) the remaining portions of the Northweat, Territories were divided into three provisional districts known as Mackenzie, Keewatin and Franklin.
${ }^{7}$ See pp. 118-119.
8 The provisional district of Yukon established in 1895 was oreated a judicial district of the North-West Territories by proclamation issued pursuant to Sect, 31 of the North-West Territories Act (RSC 1886, e. 50) on Aug. 16, 1897 and by the Yukon Territory Act (SC 1898, 0. 6) was declared to be a separate Territory.


Wellington Street in central Ottawa. On the north wide may be seen the new National Library, the Supreme Court and the towers of the Justice, the Confederation and the Parliament Buildings, opposite ore the Trade and Commerse, Veterons Affairs and Bank of Canada buildings.


The now administration building of the Deportment of Agriculture in the Experimental Farm, southcentral Otrawa.

Part of the greal complex of National Research Council buildings, east of Ottowa.

The Headewarters of the Department of National Health and Welfare is the focal building of Tunney's Pasture in west-cestral Ottawa, which now contains eighteen buildings of various sizes.


Confederation Heights, south Oltawa, contains $s x$ buildings housing the Canadian Broadcasting Corporation administration, the Fihheries, lasurance and Post Office Departments, Public Works administration, the Coinmunications Branch of the National Research Council, and otter services.


## FEDERAL GOVERHMENT

BUILDINGS IN OTTAWA pre quite divertified in detign. The early. centeally locoted buildings followed the architecture or a modified whetion of the orchitecture of the Porlioment Buildings. However. most Departments of Government heve been re-housed within the post fifteen years and the new buildings are mainly functional in chapacter. As the city grow in shise and traffic became a problem. the centrolizotion of Deportments was considered impracticable and the builidings of recent construction ere grouped in orees scatlered throughout the city and its environs.

## PART II.-MACHINERY OF GOVERNMENT

## Section 1.-The Federal Government

Canadian governmental machinery or institutions function through the application of the British North America Act and its amendments and those other constitutional principles and developments-both "written" and "uawritten"--that have evolved from the combination of British law and traditions with Quebec's adherence to the French language and habits of mind, all within a New World transcontinental environment. They are classified into three branches-the Executive, the Legislature and the Judiciary-and exist for each of the three levels of government in Canada-federal, provincial and muni-cipal-functioning within their respective jurisdictions as specified respectively by the provisions of the British North America Act and by their statutes of origin.

Despite this division of the Government of Canada into three separate branchea, Canada's system of responsible government was long ago evolved from the British practice of the union of the executive and legislative branches which is the antithesis of the United States system embodying the opposing principle of the division or separation of executive, legislative and judicial powers or authorities from one another. As recounted under the heading of The Cabinet (pp. 85-86), there is a close identification of the Canadian legislative and executive branches of government, with final direction and authority emanating from the former. The Prime Minister and his Cabinet, which formulates and carries out all executive policy, have seats in Parliament and are responsible at all times to the House of Commons and it is here that the principle of the union of powers finds its significant expression. On the other hand, the guarantee of the independence of the judiciary, whose superior court judges are appointed by the Governor General (in actual fact by the Prime Minister), is ensured in the constitutional provision that they shall hold office during good behaviour and can be removed by the Governor General only after a joint address of both Houses of Parliament; in this guarantee is found a limited acceptance of the principle of separation of powers, for judges cannot be removed because their decisions happen to be disliked by the Cabinet, by Parliament, or by the people; they can conscientiously perform their judicial functions without fear or intimidation.

In addition to the political institutions embraced by the executive and legislative branches, the machinery of the government at the federal level includes the non-political public service consisting of employees of the state organized in 24 departments of government, some two dozen special boards and commissions, and about 45 Crown corporations or other agencies engaged in administering various public services under their respective statutes and ultimately accountable, through a Minister, to Parliament. Part III of this Chapter recounts briefly the administrative functions of the Federal Government under four Sections, the first three describing the financial administration of the Government of Canada, the functions of each department, board, commission, and of each Crown corporation (whether classifed as departmental, agency or proprietary under the Financial Administration Act) and the fourth listing the principal Acts of Parliament grouped according to the department charged with the administration thereof.

The changing demands on government in this technical age with respect to economic planning, social adjustment and individual welfare were reflected recently in a major reorganization of the administrative responsibilities of the Government of Canada. Although many of the features of this reorganization were first announced in a background statement by the Prime Minister on Dec. 17, 1965 and certain of the immediate objectives with respect to the transfer of duties and responsibilities from one Minister and Department to avother were implemented through Orders in Council (published in the Canada Gazette of Jan. 12, 1966) under the Public Service Rearrangement and Transfer of Duties Act, the establishment of new Departments and the altering of the names of others required legislative enactment. To this end, the Government Organization Bill (No. C-178), was passed by the Commons on June 6, 1966 and received Royal Assent on June 16, 1966. The Act (SC 1966, c. 25), proclaimed in effect as of Oct. 1, 1966, authorizes the establish-
ment of the Departments of the Solicitor General of Canada, the Registrar General of Canada, Indian Affairs and Northern Development, Manpower and Immigration, Energy, Mines and Resources, and Forestry and Rural Development, and of the office of President of the Treasury Board; the establishment of the offices of Ministers of these Departments and the designation of their respective powers, duties and functions; and the appointment of deputy heads of the new Departments and other officers, employees, etc. These numerous changes in government organization and the delineation of the respective policies and administrative functions of the Ministers and their Departments are outlined at pp. 130-150 and presented visually in the aecompanying government organization chart.

## Subsection 1.-The Executive

The Grown.-The British North America Act of 1867 (Sect. 9) provides that "the Executive Government and authority of and over Canada is vested in the Queen" The functions of the Crown, which are substantially the same as those of The Queen in relation to the British Government, are discharged in Canada by the Governor General in accordance with established principles of responsible government.

The Queen.-The personal participation of The Queen in the functions of the Crown in Canada has been limited to such occasions as the granting of honours and awards, approval of changes in the Table of Precedence, institution of new military awards, or the periodic appointment of a Governor General. On the occasion of a royal visit, The Queen may participate in those ceremonies that otherwise are carried out in her name, such as the opening and dissolution of Parliament, the assent to Bills and the granting of a general amnesty.

Apart from her constitutional position in relation to the various governments of the Commonwealth countries, The Queen is Head of the Commonwealth and symbolizes the association of the member countries. Until 1953 the title of The Queen was the same throughout the Commonwealth. Constitutional developments put the title somewhat out of accord with the facts of the position, and in December 1952 it was decided by the Prime Ministers of the Commonwealth countries meeting at London, England, that new forms of title for each country should be devised. The title for Canada was approved by Parliament and established by a Royal Proclamation on May 28, 1953. The title of The Queen, as far as Canada is concerned, now is:-
"Elizabeth the Second, by the Grace of God of the United Kingdom, Canada and Her other Realms and Territories Queen, Head of the Commonwealth, Defender of the Faith"
1.--Sovereigns of Canada since Confederation, 1867

| Name | Dynasty | $\begin{aligned} & \text { Year } \\ & \text { of } \\ & \text { Birth } \end{aligned}$ | Date of Accession |
| :---: | :---: | :---: | :---: |
| Victoria. | House of Hadover. | 1819 | June 20, 1837 |
| Edward VII | House of Saxe-Coburg and Gotha. | 1841 | Jan. 22, 1901 |
| George V. | House of Windsor.............. | 1865 | May 6, 1910 |
| Edward VIII | House of Windsor.. | 1894 | Jan. 20, 1936 |
| George VI | House of Windzor | 1895 | Dec. 11, 1936 |
| Elizabeth II. | House of Windsor. | 1926 | Feb. 6, 1952 |

The Governor General.-The Governor General, appointed by The Queen as her personal representative in Canada on the advice of the Prime Minister of Canada, traditionally serves for a term of five years. He exercises the executive authority of The Queen in relation to the Government of Canada under Letters Patent issued under the Great Seal of Canada (revised and re-issued, effective Oct. 1, 1947) and the provisions of the British North America Acts, 1867 to 1964. Acting under the recommendations of his responsible Ministers, in The Queen's name, he summons, prorogues and dissolves Parliament, assents to Bills, and exercises other executive functions.

The Governor General's annual salary and allowances provided by the Parliament of Canada are $\$ 48,666$ and $\$ 72,000$, respectively. Office expenses and certain other items of expenditure are provided for in the estimates for the Office of the Secretary to the Governor General.

The present Governor General is styled His Excellency General The Right Honourable Georges P. Vanier, D.S.O., M.C., C.D.

## 2.-Governors General of Canada since Confederation, 1867

| Name | Date of Appointment | Date of Assumption of Office |
| :---: | :---: | :---: |
| Tee Viecount Monck of Ballytrammon. | June 1, 1867 | July 1.1867 |
| Ter Baron Lisgar df Ligear and Bajlbborough | Dec. 29, 1868 | Feb. 2, 1869 |
| Tee Earl of Dupprrin. | May 22, 1872 | June 25, 1872 |
| Tre Marquis of Lorne. | Oct. 5,1878 | Nov. 25, 1878 |
| Tbe Marguis of Lanstowne | Ang. 18, 1883 | Oct. 23, 1883 |
| Tre Baron Stanley of Prieston | May 1, 1888 | June 11, 1888 |
| The Earl of aberdeen | May 22. 1893 | Sept. 18, 1893 |
| Telearl of Minto | July 30, 1898 | Nov. 12, 1898 |
| Tar Earl Grey | Sept. 26, 1904 | Dec. 10, 1904 |
| Fibld Marshal H. R, H. The Duke of Connauget | Mar 21. 1911 | Oct. 13, 1911 |
| The Doke of Devanshirz. | Aug. 19, 1916 | Nov. 11, 1915 |
| General The Baron Byng of Vimy | Aug. 2. 1921 | Aug, 11, 1921 |
| Tre Viscount Wrlingdon or Ratton | Aug. 5, 1926 | Oct. 2, 1926 |
| The Earl op Bessborouga. | Feb. 9.1931 | Apr. 4, 1931 |
| The Baron Treedsmdir of Elsfield | Aug. 10, 1935 | Nov. 2, 1935 |
| Major Gexpral Tex Earl of Atelone. | Apr. 3, 1940 | June 21. 1940 |
| Field Marshie The Viscount Alexander of Tunis | Mar. 21, 1946 | Apr. 12. 1946 |
| Ter Riget Honodrable Vincent Massey. | Jan. 24, 1952 | Feb. 28, 1952 |
| General Thi Right Honourable Georges P. Vantbe | Aut. 1, 4959 | Sept. 15, 1959 |

The Cabinet. -The Cabinet is a committee of Ministers chosen by the Prime Minister (the leader of the political party forming the Government of the Day) generally from Members of Parliament. By convention, all members of the Cabinet either have seats in Parliament or secure seats within a short time and, again by convention, all Ministers in charge of departments of goverament are generally Members of the House of Commons although there is nothing in the Constitution to prevent a Minister with Portfolio being a Senator.* However, they generally prefer to have seats in the House of Commons where all crucial legislation, by convention, is introduced and where they can offer explanations necessary to secure passage of their Estimates or legislation with which they are deeply concerned. Ministers without Portfolio (without a department to administer) can be members of either the House of Commons or the Senate. Frequently the Cabinet contains one Minister without Portfolio-usually the Leader of the Government in the Senate-and perhaps one or two others chosen for a variety of reasons such as the desirability of including certain provincial or sectional representation that might otherwise be lacking in the Ministry.

Cabinet members are selected by the Prime Minister in such manner as to ensure, as far as possible, representation of the several geographical and political regions of the country and its principal ethnic, religious and social interests. Each Cabinet Minister generally assumes charge of one of the departments of government, although a Minister may bold more than one portfolio at the same time or he may hold one or more portfolios and one or more acting portfolios, or a Minister without Portfolio may hold one or more acting portfolios. In his acting capacity, the Minister exercises the same authority as if he were the Minister of the department.

The position of Prime Minister, the keystone of the Cabinet, is one of exceptional authority. He alone makes recommendations on the dissolution and convocation of Parliament, appointment of Privy Councillors, Cabinet Ministers, Lieutenant-Governors,

[^27]Chief Justices, Senators, Speakers of the Senate and House of Commons, and Deputy Heads of departments. The Cabinet, under his leadership, directs the business of the Commons, initiates nearly all public Bills placed before Parliament, and has complete responsibility for the initiation of taxes and the recommendation of expenditures. Following established precedent or convention, it is always responsible to the Commons. When the Cabinet (the Government) suffers defeat on a Government Bill or a vote of censure or on a motion of want of confidence in the Commons, the existing Government or Cabinet must either resign or request a dissolution from the Governor General. If it resigns, the Governor General may call on the Leader of the Opposition in the Commons to form a new Government. Alternatively, if a Government that has been defeated in the House is granted a dissolution and is defeated in the ensuing general election, then, should no clear majority be indicated, the Government may decide (1) to remain in office and seek a vote of confidence in the House when it meets or (2) to resign immediately with the consequent result that the Governor General will ask the leader of the party with the highest number of members returned to form a new Government. These alternatives may also eventuate as a result of a general election subsequent to the normal dissolution of Parliament at or near the close of its statutory life.

The primary responsibility of the Governor Geaeral in either of the above circumstances is to provide the nation with a Cabinet or Ministry capable of conducting Her Majesty's Government with the support of the House of Commons.

The Prime Ministers since Confederation are listed in Table 3 and the members of the Ministry as at Oct. 1, 1966 in Table 4. Sessional and other allowances received by Cabinet Ministers are given at pp. 100-101.

## 3.-Prime Ministers since Confederation, 1867

| Ministry | Prime Minister | Length of Administration |
| :---: | :---: | :---: |
| 1 | Rt. Hon, Sir Joun Alexander Macdonald. | July 1, 1867 - Nov. 5, 1873 |
| 2 | Hon. Alexander Mackenzie. | Nov. 7, 1873-Oet. 16, 1878 |
| 3 | Rt. Hon. Sir John Alexander Macdonald. | Oct. 17, 1878-June 6, 1881 |
| 4 | Hon. Sir John Joseph Caldwell Absott. | June 16, 1891 - Nov. 24, 1892 |
| 5 | Rt. Hon. Sir Jobn Sparrow David Thompton | Dee. 5, 1892 - Dec. 12, 1894 |
| 6 | Hon. Sir Mackenzie Bowele. | Deo. 21, 1894 - Apr. 27, 1896 |
| 7 | Rt. Hon. Sir Cearless Tupper | May 1, 1896 - July 8, 1896 |
| 8 | Rt. Hon. Sí Wiutrid Lateier. | July 11, 1896-Oct. 8, 1911 |
| 9 | Rt. Hot. Sir Robert Laird Borden | Oct. 10, 1911 - Oct. 12, 1917 (Conservative Administration) |
| 10 | Rt. Hon. Sif Robert Laird Borden | Oct. 32, 1917 - July 10, 1920 (Unionist Administration) |
| 11 | Rt. Hon. Abthor Mifighen. . . . . . . . . . . . . . . . . . . . . . . . . . . . . | July 10, 1920 - Dec. 29, 1921 (Unionist-"National Liberal and Conservative Party") |
| 12 | Rt. Hon. Whllam Lyon Mackenzie King........................ | Dec. 29, 1921 - Jupe 28, 1926 |
| 13 | Rt. Hon. Arthue Meighen | June 29, 1926-Sept. 25, 1926 |
| 14 | Rt. Hon. Wifliam Lyon Mackenzer King | Sept. 25, 1926 - Aug. 6, 1930 |
| 15 | Rt. Hon. Riceard Bedpord Bennett. . . . . . . . . . . . . . . . . . . . . . | Aug. 7, 1930 - Oct. 23, 1935 |
| 16 | Rt. Hon. Wialiam Lyon Mactenzie King.......................... | Oct. 23, 1935 - Nov. 15, 1948 |
| 17 | Rt. Hon. Louis Stephen St. Latrent | Nov. 15, 1948 - June 21, 1957 |
| 18 | Rt. Hon. John George Dieftnbakrr............................ | June 21, 1957 - Apr. 22, 1963 |
| 19 | Rt. Hon. Lester Bowhes Pearson. ............................... | Apr. 22. 1963 - ... |

# 4.-Members of the Nineteenth Ministry, as at Oct. 1, 19661 

(According to precedence of Ministers)
Nors-A complete list of the members of Federal Ministries from Confederation to 1913 appears in the 1912 Year Book, pp. 422-429. Later Ministries will be found in subsequent editions.

| Offere | Ocempant | Date of First Appointment | Date of Appointment to Present Portfolio |
| :---: | :---: | :---: | :---: |
| Pri | Rt | Apr, 22, 1963 | 63 |
| Secrecary of State for | Hon. Pavd Joszph James M | Apr. 22, 1963 | Apr. 22, 1963 |
| Minister of Trade and Comme | Hod. Robert Hienty Winters. | Jan. 4, 1966 | Jan. 4, 1966 |
| Minister of Transport. | Hob. Join Whitney Pickinsgix. | Apr. 22, 1963 | Feb. 3,1964 |
| Minister of National D | Hod, Paul Theodorr Heulyer., | Apr. 22, 1963 | Apr. 22, 1963 |
| Canada | Hod. Mitchetil Siar | Apr. 22, 1963 | Apr. 22, 1963 |
| Minister of Public Worl | Hon, George James Mcil | Apr. 22, 1963 | Dec. 17, 1965 |
| Development............................ | Hon. Abthos | Apr, 22, 1963 | Apr. 22, 1963 |
| Minister of Justice and Attomey General of |  |  |  |
|  | Hour. Locien C | Apr. 22, 1963 | Dec. 17, 1985 |
| Minister of National Health | Hon. Atan Joserp MacE | Apr. 22, 1963 | Dec. 17, 1965 |
| Minister of Fisheries | Hon. Hádard Robichaod | Apr. 22, 1963 | Apr. 22, 1963 |
| Minister of Veterang A | Hon. Roger Terdeet | Apr. 22, 1963 | Apr. 22, 1963 |
| Secretary of State of Canada............. | Hon. Judy V. LaMa | Apr. 22, 1963 | Dec. 17, 1965 |
| Minister of Industry and Kinister of De fence Production. | Hon. Charles Mrus D | Apr. 22, 1963 | (July 25, 1963 |
| President of the Queen's Privy Council for |  |  | Apr. 22, 1063 |
| Canada add Pegistrar General of Canada | Hon. | Apr. 22, 1963 | Dec. 17, 1965 |
| Minister of Labour | Hon. John Robert Nicheider | Apr. 22, 1963 | Dec. 17, 1965 |
| Member of the Administration and Lasder of the Government in the Senate......... | Hon. Jorn Josrpe Conno | Feb. 3, 1964 | Feb. 3, 1964 |
| Minister of Forestry and Rural Development. | Hod. Matrice Sat | Feb. 2, 1964 | Feb. 3, 1984 |
| Minister of National Revenue and President of the Treasury Board | Hon. Edgar John Be | June 29, 1984 |  |
| Ameociate Minister of National Defe | Hon, Leo Alphonsp Josepe Cadiedx | Feb. 15, 1965 | Feb. 15, 1965 |
| Solicitor General of Canada | Hou. Lawrence T. Pennell. | Dec. 17, 1965 | Dee. 17, 1965 |
| Minister of Energy, Mines and Resources. | Hon. Jean-Luc Pép | Dec. 17, 1865 | Dee. 17, 1965 |
| Minister of Manpower and Immigration | Hod. Jean Marceand | Dec. 17, 1965 | Dee. 17, 1965 |
| Minister of Agricultu | Hon. Jobn James Greene. | Dec. 17, 1965 | Dee. 17, 1965 |
| Husster Gea | Hon. Joseph Julen Jean-Pierrs Córe | Dec. 17, 1965 | Dee. 17, 1965 |
| Member of the Administration. | Hod. John Napter Turne | Dec. 17, 1965 | Dec. 17, 1965 |

[^28]Parliamentary Secretaries.-The Parliamentary Secretaries Act (SC 1959, c. 15), assented to June 4, 1959, provides for the appointment of 16 Parliamentary Secretaries from among the Members of the House of Commons to assist the respective Ministers in such manner as each Minister may direct. The Government thus revived the system of parliamentary assistantships in practice during the World War II and postwar years subsequent to 1943, whereby Cabinet Ministers might receive assistance in the performance of their parliamentary functions and promising Members of the House might secure a degree of apprenticeship for higher public office. Parliamentary Secretaries hold office for 12 months.

At Oct. 1, 1966, the following Parliamentary Secretaries were in office:-

| Secretasy | Minister |
| :---: | :---: |
| Jorn Matheson........ | Prime Minister |
| Prerze Elliot Thudrad | Agricultare |
| Jobn C. Monio | Mappower and Immigration |
| donald S. Mactonald | External Affairs |
| J.J. Jean Chbítize. | Finance and Receiver General |
| Riceard Casein. | Fisheries |
| Bayce S. Mackaset | Labour |
| Jack Datib.. | Energy. Mines and Resources |
| Maroarbt Ridrout. | National Health and Weliare |
| James E. Walker. | National Revenue and President of the Tressury Board |
| Stanlity Haddasz. <br> John B. Stewart | Indian Affairs and Northern Development Pablin Works |
| Albret Búchard. | Secretary of State |
| Jran-Charima Cantin | Trade and Commerce |
| Jamts A. Btrne... | Transport |

The Privy Council.-The British North America Act of 1867 (Sect. 11) provides for "a Council to aid and advise in the Government of Canada, to be styled the Queen's Privy Council for Canada " At present it consists of about 115 members sworn of the Council by the Goveroor General on the advice of the Prime Minister. Membership in the Privy Council is for life so that Privy Councillors include both former and present Ministers of the Crown as well as a number of persons who have been, from time to time as an honour, sworn as Privy Councillors; these include members of the Royal Family, past and present Commonwealth Prime Ministers, and former Speakers of the Senate and of the House of Commons of Canada. The Council seldom meets as a body and its constitutional responsibilities as adviser to the Crown in respect to Canada are performed exclusively by a Committee: the membership thereof, with a few historical exceptions, is identical to that of the Cabinet of the Day. A clear distinction between the functions of the Committee of the Privy Council and the Cabinet is rarely made and actually the terms "Council" and "Cabinet" are commonly employed as synonyms.

## 5.-Members of the Queen's Privy Counell for Canada According to Seniority Thercin, as at Oct. 1, 1968

President of the Privy Council. Hon. Guy Favreat
Clerk of the Privy Council and Secretary to the Cabinet.
R. G. Robletson

Norz.-In this list the prefis "Rt. Hon." indicates membership in the British Privy Council.

| Member ${ }^{1}$ |  | e When orn In | Member ${ }^{\text {l }}$ | Date When Sworn In |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Hon. Thomas Alexander Crerar. | Oct. | 12, 1917 | Hon. Donald Methuen | June | 21, 1957 |
| Hon. Henrey Herbert Stevens. | Sept. | 21. 1921 | Hon. Alprit Johnzon B | June | 21. 1957 |
| Hon. Edward Jameg Mc Morr | Nov. | 14, 1923 | Hon. Grorge Hers. | June | 21, 1957 |
| Ret. Hon. Charles Vincent Massey.. | Sept. | 16, 1925 | Hon. Lion Balcer. | June | 21, 1957 |
| H.R.H. The Dulie of Windsor. | Aug. | 2, 1927 | Hon. George Randoly Prabices | June | 21, 1957 |
| Hon. Donsld Matheson Sutherland | Aug. | 7, 1930 | Hon. Gordon Cuurcet | June | 21, 1957 |
| Hon. Thomas Gerow Murphy. | lug. | 7. 1930 | Hon. Edmund Davie Folton | June | 21, 1957 |
| Hon. Wilhiam Earl Rowe. | Aug. | 30, 1935 | Hon. Dodglas Scott Harines | June | 21, 1957 |
| Hon. Cuarles Gavan Po | Oct. | 23, 1935 | Hon. Ellen Iouks Fairclodgh | June | 21, 1957 |
| Rt. Hon. Jamez Lorimbr Ils | Oct. | 23, 1935 | Hon. J. Angus Maclean. | June | 21, 1957 |
| Hon. Josepr Enoll Miceato | Oct. | 23, 1935 | Hon. Miceael Starr | June | 21. 1957 |
| Hon. Colin Wrliam Grorge Greson.. | July | 8, 191' | Hon. Willay Mclean Ham | June | 21, 1957 |
| Hon. Josept Thorarinn Thorson. | June | 11, 1941 | Hon. Jameg Mackerras Macdonnell. | June | 21, 1957 |
| Hon. Williait Ferdinand Alphonse |  |  | Hon. William J. Browne. | June | 21, 1957 |
| Torgeon.......................... | Oct. | 8. 1941 | Hon. Jay Waldo Monteith. | Aug. | 22, 1957 |
| Rt. Hon. Lous Stephen St. Laurent. | Dee. | 10, 1941 | Hon. Francis Alvin George |  |  |
| Hon. Josepri Arteur Jeak | Apr. | 18, 1945 | Hamliton..................... | Aug. | 22, 1957 |
| Hon. Lionel Chevrier. | Apr. | $\begin{array}{ll} 18 & 1945 \\ 18, & 1945 \end{array}$ | H.R.H. The Prince Phlar, Duke of Edinburgh | Oct. | 14, 1957 |
| Hon. Dojglas Cearles Ab | Apr. | 18, 1945 | Hon, Raymond Joseph Micha |  |  |
| Hon. Thomas Vien. | July | 18, 1945 | O'Hurle y | May | 12, 1958 |
| Hon. Wishart Mclea Ros |  | 4. 1945 | Hod. Henri Cotrtemanc |  |  |
| Honi Minton Fowler Gregg. | Sept. | 2. ${ }^{2} 1947$ | Hon. Davtd James Walker......... |  | $\begin{aligned} & 20,1959 \\ & 20,1959 \end{aligned}$ |
| Hon. Rohert Welifngton Mayeiw Rt. Hon. Lester Bomles Pearson ${ }^{3}$ | June | 11,1948 <br> 10.1948 | Hon. Josepr Pierre Albert Sevigny. Hon. Hogh yohn Flemming......... |  | $\begin{aligned} & 20,1959 \\ & 11,1960 \end{aligned}$ |
| Hon. Stohet Sinclair Garson...... | Nov. | 15, 1948 | Hon. NoÉl Dorion | Oct. | 11, 1960 |
| Hon. Robert Henry Winters | Nov. | 15. 1948 | Hon. Walter Dinsdale | Oct. | 11, 1960 |
| Hon. Cbarles Jost Burchell | Apr. | 1, 1949 | Hon. George Ernest Halpenny | Oct. |  |
| Hon. Hogues Lapojnte | Aug. | 25. 1949 | Hon. Robert Henry McGregor | Dec. | 21, 1960 |
| Hon. Gabriel Edoutad Rinfe | Aug. | 25, 1949 | Hom. Walter Morley asmline. | Dec. | 28, 1981 |
| Hon. Walter Eqward Harris | Jan. | 18. 1950 | Hon. Leslete Miscanpprelt Fros |  | 28, 1961 |
| Hon. Grorge Prodia | Dec. | 13, 1950 | Hon. Jacates Flinn. |  | 48,1962 |
| Earl Alexander of $T$ <br> Hon. James Sinclair. | Jan. | 15, 1952 | Hor. Paul Martineav | Aug. | 9. 1962 |
| Hon. Ralph Osborne Campn | Oct. | 15, 1952 | Hon. Richard albert Bell. . . . . . . . | Aug. | 9, 1982 |
| Hon. William Ross Macdonat | May | 12, 1953 | Hon. Malcolm Wallace McCutcheon. | Aug. | 9. 1962 |
| Hon. Grorge Atexander Drew | May | 12. 1953 | Hon. Roland Michener |  | 15. 1962 |
| Hon. Jonn Whaney Piekersami ${ }^{2}$ | June | 17, 1953 | Hon. Marcel lambert. |  | 18, 1963 |
| Hon. Jean Lesage. | Sept. | 17.1953 |  |  | 18, 1963 |
| Hon. Roch Pinard | July | 1, 1954 | Hon, Martal asselin... | Mar. | 18, 1963 |
| Hon. Lous Rene Beag | Apr. | 15، 1957 | Hon. Walter Lockhart Gor | Apr. | 22, 1963 |
| Hon. Patd Theodore Helliter ${ }^{2}$ | Apr. | 26, 1957 | Hon. Mrichell Searp | ${ }_{\text {Apr }}$ | 22, 1963 |
| Rt. Hon. John Gborge Diepenbaker. | June | 21, 1957 | Hon. Azellus De |  | 22, 1963 |

For lootnotes, see end of table.

## 5.-Members of the Queen's Privy Council for Canada According to Sentority Theretn, as at Oct. 1, 1966-concluded


${ }^{1}$ Members of Her Majesty's Privy Council tor Canada take rank inter se according to the dates of their being sworn in. $\quad 2$ Rasks as a Member of the Cabinet. \#Ranks as the Prime Minister of Camada.

## 6.--Duration and Sessions of Parliaments, 1953-66

Note.-Similar information for the 1st to the 13th Parliaments, covering the period from Confederation to 1917, in given in the 1940 Year Boak, p. 43 ; that for the 13th to 17 th Parliaments in the 1945 edition, p. 53; for the 18th and 19th Parliaments in the $1057-58$ edition, p. 46 ; and for the 20 th and 21 st Parliaments in the 1065 edition, p. 65 .

| Order of Parlisment | Session | Date of Opening | Date of Prorogation | Days of Session | Sitting Days of House of Commons | Date of Election, Writs Returnable, Dissolution, and Length of Parliament, ${ }^{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 22nd Parliament. | 1st | Nov. 12, 1853 | June 26, 1854 | 227 | 139 |  |
|  | 2nd | Jan. 7, 1955 | July 28, 1955 | 2203 | 140 | Aug. 10, 1953: |
|  | 3 rd | Jan. 10, 1956 | Aug. 14, 1956 | 218 | 152 | Apr. 12, 1953 ${ }^{\text {Of }}$ |
|  | 4th 5th | Nov. 26,1956 <br> Jan. <br> 8, <br> 1957 | Jan. Apr. 12, 191957 | 446 95 | $7{ }^{5}$ | 3 y, , 6m., 5 d . |
| 23rd Parliament. . | 1st | Oct. 14, 1957 | Feb. 1, 1958 | 111 | 78 |  |
| 24th Parliament | 1st | May 12, 1958 | Sept. 6, 1958 | 117 | 93 |  |
|  | 2nd | Jan. 15, 1959 | July 18,1959 | 185 | 127 | Apr. 30, 19584 |
|  | 4 th | Nav. 17, 1960 | Sept. 28, 1961 | $316^{7}$ | 174 | Apr. 19, 19625 |
|  | 5 th | Jan. 18, 1962 | Apr. 18, 1962 | 91 | 65 | $3 \mathrm{y} ., 11 \mathrm{m}$. . 20 d. |
| 25th Parliament, . | 1st | Sept. 27, 1962 | Feb. 5, 19638 | 132 | 72 | June July 18, 18, , 1962 |
|  |  |  |  |  |  |  |
| 26th Parliament. | $\begin{aligned} & 1 s t \\ & \begin{array}{l} \text { nnd } \\ 3 \mathrm{l} \end{array} \end{aligned}$ |  |  |  |  |  |
|  |  | May 16, 1963 | Dec. 21, 1963 | 220 | 117 | Apr. 8, 19633 |
|  |  | Feb. 18, 1964 | Apr. 3, 1965 | $411{ }^{10}$ | 248 |  |
|  |  | Apr. 5, 1965 | Sept. 8, 1965 ${ }^{\text {t1 }}$ | 15712 | 53 | ly., 5t.. ld. |
| 27th Parliament..... $\{$, | 1st | Janr. 18, 1966 | $\cdots$ | ... | ** | Nov. 8, 19653 <br> Dec. $0,1965^{4}$ |

[^29]
## Subsection 2.-The Legislature

The federal legislative authority is vested in the Parliament of Canada consisting of The Queen, an Upper House styled the Senate, and the House of Commons. Bills may originate in either the Senate or the House subject to the provisions of Sect. 53 of the British North America Act, 1867, which provides that Bills for the appropriation of any part of the public revenue or the imposition of any tax or impost shall originate in the House of Commons. Bills must pass both Houses and receive Royal Assent before becoming law. In practice most public Bills originate in the House of Commons, although there has been a marked increase recently in the introduction of public Bills in the Senate, at the instance of the Government, in order that Billa may be dealt with in the Senate while the Commons is engaged in other matters such as the debate on the Speech from the Throne. Private Bills usually originate in the Senate. The Senate may delay, amend or even refuse to pass Bills sent to it from the Commons, but differences are usually settled without serious conflict. (See Chap. XXVII for current legislation.)

Under Sect. 91 of the British North America Acts, 1867 to 1964, the legislative authority of the Parliament of Canada extends to the following: the amendment of the Constitution of Canada (subject to certain exceptions-see p. 81); the public debt and property; the regulation of trade and commerce; unemployment insurance; the raising of money by any mode or system of taxation; the borrowing of money on the public credit; postal service; the Census and statistics; militia, military and naval service, and defence; the fixing of and providing for the salaries and allowances of civil and other officers of the Government of Canada; beacons, buoys, lighthouses and Sable Island; navigation and shipping; quarantine and the establishment and maintenance of marine hospitals; sea coast and inland fisheries; ferries between a province and any Britigh or foreign country or between two provinces; currency and coinage, banking, incorporation of banks and the issue of paper money; savings banks; weights and measures; bills of exchange and promissory notes; interest; legal tender; bankruptcy and insolvency; patents of invention and discovery; copyrights; Indians and lands reserved for the Indians; naturalization and aliens; marriage and divorce; the criminal law, except the constitution of courts of criminal juriadiction, but including the procedure in criminal matters; the establishment, maintenance and management of penitentiaries; such classes of subjects as are expressly excepted in the enumeration of the classes of subjects by these Acts assigned exclusively to the legislatures of the provinces.

Under Sect. 95, the Parliament of Canada may make laws in relation to agriculture and immigration concurrently with provincial legislatures although federal legislation is paramount in the event of conflict. By the British North America Act, 1951 (Br. Stat. 1950-51, c. 32) it is declared that the Parliament of Canada may make laws in relation to old age pensions in Canada but no such law shall affect the operation of any provincial laws in relation to old age pensions. By the British North America Act, 1964, which received Royal Assent on July 31, 1964, this amendment was extended, at the request of the Parliament of Canada (June 19, 1964) to permit the payment of supplementary benefits, including survivors' and disability benefits irrespective of age, under a contributory pension plan.

The Senate-From an original membership of 72 at Confederation, the Senate, through the addition of new provinces and the general growth of population, now has 102 members, the latest change in representation having been made on the admission of Newfoundland to Confederation in 1949. The growth of representation in the Senate is summarized by province in Table 7.

Senators are appointed by the Governor General by instrument under the Great Seal of Canada. The actual power of appointing Senators resides by constitutional usage in the Prime Minister whose advice the Governor General accepts in this regard. Until the passage of "An Act to make provision for the retirement of members of the Senate" (SC

1965, c. 4), assented to on June 2, 1965, Senators were appointed for life; that Act fixes at 75 years the age at which any person appointed to the Senate after the coming into force of the Bill will cease to hold his place in the Senate.

In each of the four main divisions of Canada, except Quebec, Senators represent the whole of the province for which they are appointed; in Quebec one Senator is appointed for each of the 24 electoral divisions of what was formerly Lower Canada. The deliberations of the Senate are presided over by a Speaker appointed by the Governor General in Council (in effect by the Government) and government business in the Senate is sponsored by the Government Leader in the Senate.

The Senate is not a competitor of the House of Commons in the field of legislation but, in the main, acts as a second chamber giving further scrutiny to legislation initiated in the House of Commons. Under the Constitution, Bills for appropriating any part of the public revenue or for imposing a tax or impost must originate in the Commons but in every other respect, since both Houses must concur in every piece of legislation, the Senate has an equal voice with the House of Commons.
7.-Representation in the Senate since Confederation, 1867

| Province | 1867 | 1870 | 1871 | 1873 | 1882 | 1887 | 1892 | 1903 | 1905 | $\begin{aligned} & 1915- \\ & 1948 \end{aligned}$ | $\begin{aligned} & 1949- \\ & 1966 \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ontario. | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| Quebec. | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 |
| Atlantic Provinces. | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 24 | 30 |
| Nova Scotia. | 12 | 12 | 12 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| New Brunswick. | 12 | 12 | 12 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Prince Edward Island. | $\cdots$ | $\cdots$ | ... | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Newfoundland. | ... | ... | $\cdots$ | $\cdots$ | $\cdots$ | .. | ... | ... | $\ldots$ | $\cdots$ | 6 |
| Western Provinces. |  | 2 | 5 | 5 | 6 | 8 | 9 | 11 | 15 | 24 | 24 |
| Manitoba. | $\ldots$ | 2 | 2 | 2 | 8 | 8 | , | 4 | 4 | 6 | 6 |
| British Columbia | $\cdots$ | $\ldots$ | 8 | 3 | $s$ | $s$ | 8 | 3 | 3 | 6 | ${ }^{6}$ |
| Saskatchewan. <br> Alberta |  | ... | ... | ... | ... | 2 | 2 | $4\{$ | 4 | ${ }_{6}^{6}$ | ${ }_{6}^{6}$ |
| Totals | 72 | 74 | 77 | 77 | 78 | 80 | 81 | 83 | 87 | 96 | 102 |

## 8.-Members of the Senate, by Province, as at Oct. 1, 1966 ${ }^{1}$

| Speaker | .Hon. Sydney John Smith |
| :---: | :---: |
| Leader of the Government. | .Hon. John J. Connolly |
| Leader of the Opposition. | Hon. Alfred J. Brooks |
| Clerk of the Senate | ohn Forbes MacNeill |

(Ranked according to seniority, by province. All Senators are entitled to the designation "Honourable".)

| Province and Name of Senator | P.O. Address | Province and Name of Senator | P.O. Address |
| :---: | :---: | :---: | :---: |
| Newfoundland- <br> (6 Senators) |  | Nova Scotia- <br> (9 Senators-1 vacancy) |  |
| Batrd, Alexinder Boyd | St. John's | Kinley, John James....... | Lunenburg |
| Basha, Michael G | Curling | Isnor, Gordon B. | Halifax |
| Hollett, Malcolm | St. John's | Smith, Donald... | Liverpool |
| Cook, Eric.. | St. John's | Connolly, Harold | Halifax |
| Carter, Chesley Win Duggan, James.... | St. John's | Blots, Frederick Murray | Truro |
| Duggan, James.. | St. John's | Macdonald, John Michael. O'Leary, Clement August | North Sydney Antigonish |
| Inman, Florence Elsie. | Montague | Urquhart, Eare | West Bay |
| MacDonald, John Joseph | Charlottetown | New Brunswick- |  |
| Prillips, Orville Howard | Alberton | (9 Senators-1 vacancy) | Saint John |

${ }^{1}$ Changes occurring between Oct. 1, 1966 and the date of going to press will be carried in an Appendix to this volume.

# 8.-Members of the Senate, by Province, as at Oct. 1, 1966-concluded 

| Province and Name of Senstor | P.O. Address | Province and Name of Senator | P.O. Addrees |
| :---: | :---: | :---: | :---: |
| New Brunswitk-coneluded |  | Ontario-concluded |  |
| Butchill, George Pricival....... | South Nelson | Sulivan, Joseph A. | Toranto |
| Ferousson, M Uriel McQueen. .- | Fredericton | Choquette, Lionel | Ottawa |
| McGrand, Freda | Frederieton Jet. | Willis, Harry A. | Toronto |
| Brooks, Alfred Jornson. | Sussex | O'teary, M. Gratran. | Ottawa |
| Fodrnter, Eogar. | Iroquois | Grosart, Allister. | Ottaws |
| Rattenrory, Nelson | Saint John | Walker, David Jam | Toronto |
| McElman. Cfarlis Robret | Fredericton | Belisle, Rheal. | Sudbury |
| Quebec- |  | Lang, Dantel Aiken............... | Toronto |
| (i) Senators) |  | Bendicrson, Whticam Moore | Kenora |
| Hugessen. Adrian K. | Montreal | Davey, Dodglas Keitr | Toronto |
| Goutin, Leon Mericier.............. | Montreal |  |  |
| Vien, Thomas. . . . . . . . . . . . . . . . | Outremont | Manitoba- |  |
| Yallancourt, Cyrlle ............ | Levis | (5 Senators-1 vacancy) |  |
| Dupuls, Vincest | Montreal | Beatilen, Arthur L. | St. Jean Baptiste |
| Dessotratilt. Jean-Marie | Quebee | Thonvaldson, Gonnar S | Winsipeg |
| Fodoriter, Sarto.................. | Montreal | Irvine, Olive Lillian. | Winnipeg |
| Molson. Hartland de |  | Haig, J. Cahpaell . . . . . . . . . . . . | Winnipeg |
| Powertaritle Cfarles Gava | Montreal | Y | Winnipeg |
| Pouliot, Jean-Francois. | Rivière du Loup | Saskatchewan- |  |
| Lefraviois, J. Eugene. | Montreal | (6 Senators) |  |
| Méthot, Léon. | Trois-Rivières | Aseltine, Walter M. | Rosetown |
| Monette, Gdetave | Montreal | Boferer, William Albe | Prince Albert |
| Qdart, Josie alice Dinan | Quebec | Peargon, Arthor M. | Lumsden |
| Beadienc. Louis Prilippe. | Montreal | Heatyshyn, John | Saskatoon |
| Fiynn, Jacques. | Quebec | McDonald. Alexander Hamilton. | Regina |
| Bodrget, Maurice | Levis | Argie, Hazen Roheht. ........... | Kayville |
| Bidinas, loutsp... | Montreal |  |  |
| Denis, Azrlitus... | Montreal | (6 Senators) |  |
| Deschatelits, Jean-Patu | Montreal | Garshaw, Fred Whlmam. | Medicine Hat |
| Macnioghton, Alan Aylgoworth. | Westmount | Cameron, Donald. | Edmonton |
| Langlots, J. G. Leopold. | Quebec | Gladstone, Jame | Cardston |
| Desruisseate, Padl. | Sterbrooke | Hastings, Earl ad | Calgary |
|  |  | Hays, Harry Whlha | Calgary |
| Ontario- <br> (21 Senators-3 vacancies) |  | Prowse, James Hakpz | Edmonton |
| Hayden, Salter Adrian.. | Toronto | British Columbis- |  |
| Paterson, Norman Mfleled | Fort William | (6 Senators) |  |
| Davies, William Rupert. | Toronto | Farris, John Wallace de B. | Vancouver |
| Roebtce, Arthor Wbntworth. | Toronto | McKeen, Stanlif Stewart | Vancouver |
| Macdonald, Witliam Ross. | Brantford | Reid, Tfidmes. | NewWestminster |
| Connolly, John J........ | Ottaws | Gmite, Stpney John | Kamloops |
| Croll, David A. | Toronto | MacKenzie, Norinan Abchibazd |  |
| Leonard, Thomas D'Arcy........ | Toronto Madoc | McRag....................... Nichol, John Lang........... | Vancouver <br> Vancouver |

The House of Commons.-The British North America Act, 1867 provided that in respect of representation in the House of Commons the Province of Quebec should have the fixed number of sixty-five members and that there should be assigned to each of the other provinces such a number of members as would bear the same proportion to the number of its population as the number sixty-five bears to the number of the population of Quebec. This Act also provided that on the completion of a census in 1871 and of each subsequent decennial census the representation of the several provinces should be readjusted provided the proportionate representation of the provinces as prescribed by the Act were not thereby disturbed.

In the session of 1946 the House of Commons adopted a resolution stating that the effect of the provisions of the British North America Act relating to representation had not been satisfactory in that proportionate representation of the provinces according to population had not been maintained and that a more equitable apportionment of members to the various provinces could be effected if readjustments were made on the basia of the population of all the provinces taken as a whole. The Act was amended accordingly in

1946 to provide a new rule to regulate representation in the House of Commons. Generally speaking, representation was fixed as follows:-

The membership assigned to each province shall be computed by dividing the total popuLation of the provinces by two hundred and fifty-four and by dividing the population of each province by the quotient so obtained.

This rule, employed in the redistribution of representation made in 1947, was effective in the General Election of 1949.

After the completion of the 1951 Census it was apparent that, as a result of a wartime shift of population, a substantial reduction in the representation of the Province of Saskatchewan would ensue under the rules then regulating representation. Accordingly, in an effort to eliminate sharp reductions in provincial representation from one census to another, the British North America Act was again amended (RSC 1952, e. 304, Sect. 51) (see Canada Year Book 1963-64, p. 75) to ensure that the representation of any province should not be reduced by more than 15 p.c. at any one readjustment, subject however to the qualification that the effect of the rule should not be to make the representation of a province with a smaller population greater than any province with a larger population.

Subsequently in 1952, Parliament enacted RSC 1952, c. 334, effective in the General Election of 1953 and in each successive General Election down to that of the Twentyseventh Parliament (Nov. 8, 1965), which provided that representation in the House of Commons should be on the following basis:-

[^30]The number of representatives of each province elected at each of the 27 General Elections aince Confederation is given in Table 9.

## 9.-Representation in the House of Commons, as at Federal General Elections 1867-1965

| Province or Territory | 1867 | 1872 | 1874 1878 | 1882 | $\begin{aligned} & 1887 \\ & 1881 \end{aligned}$ | 1896 1800 | 1904 | 1908 | 1917 | $\begin{aligned} & 1925 \\ & 1926 \\ & 1930 \end{aligned}$ | $\begin{aligned} & 1935 \\ & 1940 \\ & 1945 \end{aligned}$ | 1949 | 1953 1957 1958 1968 1963 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Ontario. | 82 | 88 | 88 | 92 | 92 | 92 | 86 | 86 | 82 | 82 | 82 | 83 | 85 |
| Quebee | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 73 | 75 |
| Nova Scotia, | 19 | 21 | 21 | 21 | 21 | 20 | 18 | 18 | 16 | 14 | 12 | 13 | 12 |
| New Brunswic | 15 | 16 | 16 | 16 | 16 | 14 | 13 | 13 | 11 | 11 | 10 | 10 | 10 |
| Manitoba. | ... | 4 | 4 | 5 | 8 | 7 | 10 | 10 | 15 | 17 | 17 | 16 | 14 |
| British Columbia........ | ... | 6 | 6 | 6 | 6 | 6 | 7 | 7 | 13 | 14 | 16 | 18 | 22 |
| Prince Edward Island.... | $\ldots$ | ... | 6 | 6 | 6 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Alberta....... | ... | $\ldots$ | $\ldots$ | $\cdots$ | 4 | 4 | 10 \{ | 7 | 12 | 16 | 17 | 17 | 17 |
| Yukon Territory |  |  |  |  |  |  | 1 | 1 | 1 | 1 | 1 | 1 1 |  |
| Mackenzie River, N.W.T. Newlourdland.,........ | $\cdots$ | ... | $\ldots$ | $\ldots$ | $\ldots$ | $\cdots$ | 1 | . | 1 | 1 | ... | 7 | 7 |
| Totals. | 181 | 200 | 206 | 211 | 215 | 213 | 214 | z1 | 235 | 245 | 245 | 262 | 265 |

[^31]The Representation Commissioner Act setting up the office and duties of the Representation Commissioner was given Royal Assent on Dec. 21, 1963. The Electoral Boundaries Readjustment Act providing for the establishment of Electoral Boundaries

Commissions to report upon and to provide for the readjustment of the representation of the provinces in the House of Commons in accordance with the findings of the 1961 Census of population was given Royal Assent on Nov. 20, 1964.

Pursuant to Sect. 11 of the Electoral Boundaries Readjustment Act, the Dominion Statistician sent to the Representation Commissioner a certified return showing the population of Canada and of each of the provinces and the population of Canada by electoral districts as ascertained by the 1961 Census. The Representation Commissioner calculated the number of members of the House of Commons to be assigned to each of the provinces subject and according to the provisions of Sect. 51 of the British North America Act, 1867, and the rules provided therein. He then caused a statement to be published in the Canada Gazeite of Nov. 28, 1964, setting forth the following results:-

[^32]The Governor General, by proclamation published in the Canada Gazette, established an Electoral Boundaries Commission for each province. It was the task of each Commission to prepare, with all reasonable dispatch, a report setting forth its recommendations concerning the division of its particular province into electoral districts and the recommendations concerning the description of the boundaries of each such district and the representation and name to be given thereto. A copy of the 1961 Census return was sent to the chairman of each Commission immediately after its members were appointed.

Pursuant to Sect. 8 of the Representation Commissioner Act, maps were prepared in the office of the Representation Commissioner showing the distribution of population in each province and setting out alternative proposals respecting the boundaries of electoral districts in each province; these maps were then supplied to the respective Commissions. The Commissions complied with the procedure of the Electoral Boundaries Act and completed their reports within the time prescribed, which was one year. Two certified copies of each report were received by the Representation Commissioner; as required by Sect. 19(1) of that Act, one of these copies was transmitted to the Speaker of the House of Commons, who in turn laid it before the House of Commons.

Then followed a period of thirty days in which objections in writing, signed by no fewer than ten members of the House of Commons, were filed with the Speaker specifying the provisions of the report objected to and the reasons for the objection. A further period of 15 days was set aside in which the House of Commons was to consider the matter of the objections: this period was increased to 45 sitting days by an Act, assented to on Feb. 23, 1966, entitled "An Act to extend the time for consideration of objections pursuant to section 20 of the Electoral Boundaries Readjustment Act with respect to the reports of commissions established for the decennial census taken in the year 1961 "

Several objections were filed with the Speaker, the motions were taken up and considered and the reports referred back to the Representation Commissioner by the Speaker and then to the Commissions. On the expiration of a 30 -day period for that purpose, the Commissions returned their reports with or without amendment, through the Representation Commissioner to the Speaker. Then a draft representation order was prepared by the Representation Commissioner to be transmitted to the Secretary of State. This order specified the number of members of the House of Commons who shall be elected for each of the provinces as calculated by the Representation Commissioner and, dividing each of the provinces into electoral districts, described the boundaries of each such district and specified the representation and name given thereto, in accordance with the recommendations contained in the reports. The Governor in Council, by proclamation of June 16, 1966, declared the draft representation order to be in force, effective upon the dissolution of the then-existing Parliament.

## 10.-Electoral Districts, Voters on List and Votes Polled, Names and Addresges of Members of the Iouse of Commons as Elected at the Twenty-seventh General Election, Nov. 8, 1965 and Revised to Oct. 1, 1965

Speaker
Hon, Legen Lamofreux
Prime Minister. ..................................................................... Rt. Hon. Lester B. Pearson
Lesder of the Opposition............................................................. Rt. Hon. John G. Dirrbnbaker
Clerk of the Fonse of Commons.
Lfon J. Raymond
Nors.-The vote is summarized by provinces in Table 13. p. 102. The leaders of the political parties are indicated by asterisks ( ${ }^{*}$ ). For Parliamentary Secretaries, see p. 87. This information, exeept the population of constituencies, has been supplied by the Chief Electoral Officer, Party affiliations are unofficial. Lib, $=$ Liberal; P.C.-Progressive Conservative; S.C. $=$ Social Credit; N.D.P. $=$ New Democratic Party; R,cr, $=$ Ralliement créditiste; Ind. = Independent. Party standing at General Election of Nov. 8, 1965 : 131 Liberal 97 Progressive Conservative, 21 New Democratic Party, 8 RaIliement créditiste, 5 Social Credit and 2 Independent.

| Province and Electoral District | $\begin{aligned} & \text { Popur } \\ & \text { lation, } \\ & \text { Census } \\ & 1961 \end{aligned}$ | Voters on List | Total <br> Votes <br> Polled | Votes <br> Polled by Member | Name of Member | P.0. Address | Party Afiliation |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. |  |  |  |
| Newfoundland- <br> (7 members) |  |  |  |  |  |  |  |
| Bonsvista-Twillingate. | 50,527 | 24,819 | 13,866 | 10,113 | Hon. J. W. Pickersaml. | Ottawa, Ont | Lib. |
|  | 48,673 | 23,499 | 15,253 | 11,380 | C. W. Carter |  |  |
| Bay-Labrador....... | 82.433 | 44,208 | 25,543 | 17,933 | C. R. Granger ${ }^{2}$ | Ottawa, Ont | Lib. |
| Humber-St. George's. . | 74,015 | 32,439 | 22, 275 | 13,855 | H. M. Batten. | Corner Brook |  |
| St. John's East......... | 77,070 | 39,362 | 29,259 | 16,182 | J. P. O' Kexpe | St. John's. . |  |
| St. Jobn's West......... | 68.979 56,156 | 33,024 28.731 | 25,503 16,683 | 14,481 10,377 | R. Cashin. | St. John's.......... | Lib. |
| Prince Edward Island(4 members) |  |  |  |  |  |  |  |
| Kings.................. | 17,893 | 10,074 | 9,216 | 4,591 | M. J. McQuaid. | Souria. | P.C. |
| Prince. | 40,894 | 20.160 | 17,895 | 9,082 | D. MacDonald | Alberton. | P |
| Queens. | 45,842 | 26,250 | 44,895 | $\begin{cases}12,588 \\ 12,305\end{cases}$ | Hon. J. A. Maclean.... <br> H. Maçuarrie. | Beaton's Mills Victoria. |  |
| Nova Scotim(12 members) |  |  |  |  |  |  |  |
| Guysborough., | 27,634 | 14,750 | 12,697 | 6,210 | J. B. Stewart. | Bayfield. | Lib. |
| Cape Breton North and Victoris.....te |  |  |  |  |  |  |  |
| Cape Breton South..... | 50,057 | 25,531 | 21,469 | 11,258 | R. Mur. | Sydrey Mines. | C. |
| Colchester-Hants. | 60,751 | 34,611 | 29,824 | 15,250 | C. F. KENNEDT | Truro |  |
| Cumberland.. | 37,767 | 20, 818 | 18,100 | 9,560 | R. C. Conteg. ............ | Amherst |  |
| Digby-Annapolis-Kings | 76,073 | 39,527 | 33,708 | 17,845 | J. P. Nowlan | Wolfville |  |
| Halifax. | 225,723 | 124,633 | 184,153 | 44,007 | R. McCleave. | Halifax. | P.C |
| Inverness-Richmond. | 33,907 | 18,609 | 15,456 | 40,983 8,137 | J. M. Forrestall ....... Hon. A. J. MacEaceen. | Waverley. | P.C. |
| Pictou............. | 43,908 | 24,703 | 21,468 | [1,289 | R. Macewan.......... | New Glasgo |  |
| Queens-Lunenburg | 48,153 | 29,772 | 23,699 | 13, 566 | L. R, Crocor, | Lunenburg. | P.C. |
| Clare... | 47,133 | 25,377 | 22,353 | 10,744 | J. O. Bow | Shelburne. | P.C. |
| New Brunswick(10 members) |  |  |  |  |  |  |  |
| Charlotte............. | 23,285 | 13,550 | 11,725 | 5,879 | A. McLean . . . . . . . . . | Black's Harbour. | Lib. |
| Glougester............. | 66,343 | 30,355 | 23,566 | 14, 121 | Hon, H.J. Robrchaod.. | Caraquet. | Lib. |
| Kent.................. | 26,667 | 11,816 | 9,662 | 5,713 | G. F. Crobsman........ | Buctouche........ | Lib. |
| Miramichi........... | 50,035 | 23,222 | 18,780 | 9,664 | G. R. McWmanam. | Newcastle. | Lib. |
| Restriouche- <br> Madawaska | 79,956 | 35,580 | 27,855 | 15,211 | J.-E. Dobés. |  |  |
| Royal. | 37,548 | 22,228 | 17,937 | 9.865 | G. FALRWEATHEE. | East Riverside... | P.C. |
| Sajot Jobn-Albert | 101,736 | 56,786 | 42,940 | 21,909 | T. M. Bell. | Saint John. | P.C. |
| Victoria-Carleto | 43,219 | 21.579 | 16,710 | 9.462 | Hon. H. J. Flem Min | Juniper. . | P.C. |
| Yestmorland. | -93,679 | 50,055 | 42, 143 | 20,768 | Margaret Rideout | Monet | Lib. |

[^33]10.-Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the Honse of Commons as Elected at the Twenty-seventh General Election, Nov. 8, 1965 and Revised to Ort. 1, 10*5-continued

| Province and Electoral District | $\begin{aligned} & \text { Popu- } \\ & \text { lation, } \\ & \text { Census } \\ & 1961 \end{aligned}$ | Votera <br> on List | Total <br> Votea <br> Polled | Votea Polled by Mem. ber | Name of Member | P.O. Addrees | Party Affiliation |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. |  |  |  |
| Quebec- <br> ( 75 members) |  |  |  |  |  |  |  |
| Argentetil-DeuxMontagnes. | 64,607 | 36,774 | 29,994 | 14,035 | R.-E, Regimbal, | Lachute. | P.C. |
| Beavce........... | 61,332 | 30,977 | 25,789 | 10,530 | J.-P. Racine. | St. Honore de |  |
| Beautarnois-Salaberry. | 70,191 | 42,254 | 32,780 | 16,145 | G. Lanigl. | aberry de |  |
|  | 32,513 | 15,902 | 11,772 | 4,783 | H. Laverdjet | Vslleyfield St. Lazare. | Lib. |
| Berthier-Maskinonge- |  | 15,002 | 11,7 | 4,783 |  |  |  |
| Delanaudière........ | 48,749 | 26.189 | 18,127 | 7,868 | A. Yanakis | St. Gabriel de |  |
| Bonaventure | 42,962 | 20.971 | 16, 441 | 8,985 | A. Bechard | Carleton sur Mer. |  |
| Brome-Missisquo | 43,217 | 25,095 | 19,562 | 9,662 | H. Grafptey | Knowlton........ |  |
| Chambly-Rouvill | 60,959 | 37,198 | 24, 839 | 14,377 | B. Pron. | Beloeil... | Lib. |
| Champlain.. | 63,086 | 33,452 | 26,170 | 12,334 | J.-P. Matte. | St. Tite | Lib. |
| Chapleau. | 71,394 | 35,897 | 26,000 | 15,402 | G. Laprise. | LaSarre | R. |
| Charlevoix. | 48,906 | 24,486 | 19,876 | 6,844 | Hon. M. Abselin. | La Malba | P.C. |
| Châteargusy-Huntingdon- |  |  |  |  |  |  |  |
| Chicoutimi..... | 61,729 83,635 | ${ }_{39} 38$ | 23,268 29,975 | 14,222 | I. | Chicoutim |  |
| Compton-Fron | 42,366 | 19,790 | 15,140 | 7,240 | H. Lattulpt | Lae Megantic | r. |
| Dorcbester. | 38,953 | 18,011 | 12,872 | 4,602 | G. Córé. | Ste. Claire. | Lib |
| DrummondArthabagka | 89,851 | 48,784 | 39,181 | 15,179 | Hon. J.-L. PEpin. | Drummotdvile. |  |
| Gaspé. | 65,300 | 28,654 | 22,901 | 11,045 | J.R. Keays..... | Gaspé | P.C. |
| Gatine | 58,771 | 33,735 | 24,818 | 13,088 | G. Ishbrlle. | Aylmer Eas | Lib. |
| Hull. | 86.563 | 44,816 | 32,988 | 17,832 | A. Caron ${ }^{\text {a }}$ | Hull.. |  |
| Iles-de-la-Madeleine | 12,479 | 5.782 | 5.430 | 2,860 | Hon. M. Saut | Outremont | Lib |
| Joliette-L'AssomptionMontcalm. | 102,717 | 59,084 | 38,815 | 15,221 | J.-R. Comtors | Repent | Lid |
| Kamourask | 35,312 | 17.694 | 12,187 | 6.127 | C.E. Dionne | St. Pascal |  |
| Labelle | 45,701 | 22,103 | 15,815 | 6,554 | G. Clernont | Thutso. | Lib |
| Lac-Saint | 48,149 | 21,547 | 17,906 | 5,642 | A. Symard. | Alma. | R,cr. |
| Lapoint | 74,408 | 33,704 | 26,999 | 13,210 | G. Grégorr | Jonquiear | R.er |
| Lévis. | 49.047 | 29,479 | 24,407 | 10,895 | R. Guar | Lauzon. |  |
| Longueui | 107,318 | 63,467 | 39,430 | 21,578 | Hon. J.-P. Cótí | Longueuil......... | Lib. |
| Lotbinièr | 38,529 | 17,847 | 15,072 | 6,238 | A. Choquetre. | Laurier Station... |  |
| Matapedia- | 67,266 | 27,557 | 20,394 | 10,435 | Hon. R. Trembl |  |  |
| Mégantic..... ${ }^{\text {c }}$ | 70.064 | 32,844 20,73 | 25,231 14.815 | 11,195 6.389 | R. Langlors | ThetIord Minee.. <br> L'Islet | R.cr. |
| Montragny-L'Islet.... | 40,987 | 20,773 24,195 | 14,815 | 6,389 11,734 | J. Brrarr. | LIslet <br> Ste. Perpétue.... | Lib. |
| Nicolet-Yamaska...... <br> Pontiac- | 45,192 41,069 | 24,195 20.868 | 18,625 18,984 | 11,734 6,593 | C. Vincent | Ste. Perpetue.... | Lib. |
| Temiscamingue | 41,069 | ${ }_{25}^{20,868}$ | 18,984 19,680 | 6,593 8,539 | T. Leprey | Temjscamin | Lib. |
| Quebec East | 92,170 | 54,124 | 41,860 | 18,900 | G. Daguet | Quebee | Lib. |
| Quebec South | 54,535 | 3+,323 | 26,933 | 16,141 | J.-C. Cantin | Quebec |  |
| Quebec West | 57,763 | 33,043 | 26,032 | 10,669 | Hon. J. Marce | Quebec |  |
| Quebee-Montmorency.. | 138,030 | 90,056 | 66,942 | 30,084 | O. Laflamme | Ste. Foy | Lib. |
| Richelieu-Verchères. | 60,832 | 38.224 | 26,514 | 15,697 | Hon L.J.-L. Cardi | Ste. Anne de Sore | Lib. |
| Richmond-Wolfe..... | 80,534 | 28,315 | 21.557 | 8,685 | P.-T. Asbelin. | Bromptonville. | Lib |
| Rimouski. | 75,076 | 35,962 | 27,177 | 11,372 | G. Leblanc | Rimouski. | Lib |
| Riviére-du-LoupTémiscousts... | 58,909 | 26,641 | 20,829 | 11,026 | R. Gendron | Rivière du Loop. | Lib. |
| Roberyal. | 56,234 | 24,574 | 19,794 | 8,786 | C.-A. Gaute | Mistassini | R.er. |
| Saint-HyacintheBagot. | 63,942 | 37,183 | 28,811 | 15,127 | Hon. J.-H.-T. Ricab | St. Hyacintbe. | P.C. |
| Saint-Jean-IbervilleNapierville |  | 35,528 | 29,113 | 12,510 |  | St. Jean. | P.C. |
| Saint-Maurice-Lafeche | 85,296 | 44+121 | 32,970 | 14,395 | J. Chrítien | Shauvisigan |  |
| Saguenay | 81,097 | 56,624 | 33.424 | 15,062 | G. Blound. | Sept |  |
| Shefford | 67, 9fit | 35,900 | 29.350 | 9.494 | L.-P. Neveu | Gran |  |
| Sherbrooke. | 73,417 | 44,432 | 33,584 | 11.808 | M. Allard. | Sherbrooke. |  |
| Stanstead. | 43,309 | 24, 122 | 18.360 | 7,628 16,806 | Y. Foresr........ |  | Lib. |
| Terrebonne | 102,450 | 61,662 | 38,641 | 16,806 | Hon. L. Cadieux. | St. Antoine des Laurentides. . | Lib. |

[^34]10.-Wlectoral Districts. Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twents-serenth General Election, Nov. 8, 1565 and Revised to Oct. 1, 1566-continued

| Province and Electoral District | $\begin{gathered} \text { Popa- } \\ \text { lation, } \\ \text { Census } \\ 1961 \end{gathered}$ | $\begin{aligned} & \text { Voters } \\ & \text { on } \\ & \text { List } \end{aligned}$ | Total <br> Votes <br> Polled | Votes <br> Polled by Member | Name of Member | P.O. Address | Party Affiliation |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. |  |  |  |
| Quebet-concluded |  |  |  |  |  |  |  |
| Trois-Rivieres. | 68,854 38,756 | 40,760 23,319 | 32.137 17.851 | ${ }_{8}^{12.927}$ | J.-A. Mongratn | Trois-Rivières. | Ind. |
| Villepeuve......... | 79,675 | ${ }_{36,584}^{23,19}$ | 17.871 28.972 | 19,839 | R. Caotetit* | le Perro | Lib. |
| Montreal and Jesus Islonds - |  |  |  |  |  |  |  |
| Cartier........ | 51,819 107 | ${ }_{60} 18.261$ | 11,047 | 5,389 | Klein. | Montreal. | . |
| Hochelag | 79,912 | 45,314 | 25.539 | 11.929 |  |  |  |
| Jrcques-Cartier- Lasele. |  |  | 79,490 |  | G. | West | Lib. |
| Lefonta | 163,148 | 192,703 | 79.490 19.331 | 44,231 9,101 | R. | Lachine | Lib. |
| Laurier | 45,652 | 25.155 | 13,356 | 7.032 | F--E. Leblano. | Montreal | Lib |
| Laval, | 198,437 | 137, 190 | 90,057 | 44,533 | J.-L. Rochon. . | Montreal | Lib. |
| Rofemon | 108,023 | 66,709 | 39,772 | 17,663 | J.-A | treal |  |
| Mercier | 233,964 | [46,20t | 80, 346 | 39,205 | P. Botlanozr | Montreal. |  |
| Mont-Roy | 128,524 | 76,942 | 51,287 | 28,064 | P.-E. Trudeat. | Montrea |  |
| Notre-Dame-de-Grace. | 100,719 | 59,776 | 43.816 | 17,796 |  |  |  |
| Outremont-Saint-Jean | 63.888 | 32,957 | 20.515 | 11,855 | Hon. M. Lamontagnz. | Montreal. | b. |
| Papinead | 87.588 | 47,504 | 27,036 | 13,920 | Hod. G. Favrrau.. | Montreal. | Lib. |
| $\mathrm{St}_{\text {cti }} \mathrm{Ann}$, | 38.173 | 16,515 | 10,573 | 6,150 | G. Lousehe. | Montreal | Lib. |
| W'estmoun | 59,609 | 35,560 | 23.906 | 13,378 | Hon. C. M. Drtrri.... | Westmount. . . . . |  |
| Saint-Denis. | 65,090 | 35,024 | 21,734 | 11,000 | M. PROD' НомМу. ........ | Mo |  |
| Saint-Hen | 71,691 | 37,718 | 24.924 | 12,310 | H..P. Lebsamd | Montreal |  |
| Saint-Jacques. | 54,679 | 28.328 | 16,429 | 7,023 | M. Rinfret... | Montreal | Lib. |
| Sl. LawtenceSt. George. | 34,020 | 19,253 | 11,693 | 6,820 | Hon, J. |  |  |
| Sainte-Marie | 56,455 | 28,973 | 17.941 | 9.672 | G.-J. Valade... | Montreal |  |
| Verdut. | 78,317 | 45,593 | 31,148 | 18,072 | B. S. Mackasey | Verdun. | Lib. |
| Ontario( 85 members) |  |  |  |  |  |  |  |
| Algoma East... | 54,868 | 22.807 | 17.307 | 9,268 | Rt. Hon. L. B. Pearson* | Ottawa. |  |
| Algoma West | 80,542 | 43,564 | 33,817 | 12,034 | G. E. Nrxon.,.......... | Sault Ste. Marie. | Lib. |
| Brantiord | 54,392 | 31,231 | 24,356 | 9,948 | J. E. Brown | Brantiord......... | Lib. |
| Brant-Hal | 57, 644 | 34, 140 | 26,065 | 13,179 | Hon, L, T. Pennels | Brantford. | Lib. |
| Cruce | 29,334 130,497 | 17,075 89,318 | 13, 718 | 6,846 32,450 | J. Loner. | Tiverton. |  |
| Cochran | 47,854 | 24, 535 | 18,511 | - 7,505 | J.A. R.ABLI. | Kapuskasing |  |
| Dufferin-Si | 53,226 | 27, 109 | 20,712 | 9,701 | J. E. MadLi | Orangeville. |  |
| Durham. | 39,816 | 23,099 | 19,037 | 8.017 | R. C. Honet | Port Hope | Li |
| Elgin. | 62,862 | 33,952 | 27,965 | 13,343 | H. E. Staftord. | St. Thomas | Lib |
| Essex East | 99.432 | 56,353 | 41.589 | 26,094 | Hon. P. Marten. | Windsor... | Lib. |
| Essex South | 55,816 | 30,898 | 24,537 | 12,887 | E. F. Whecan. | Amberatburg | Lib. |
| Easex West. | 101.526 | 57,425 | 38,969 | 21, 525 | H. Grar... | Windsor..... | Lib. |
| Gort William | 57,642 46,443 | 31, 378 | 26, 334 | 12.432 | H. Badanai. | Fort William .... |  |
| Glengary-Prescot | 48,443 40,026 | 24,335 22.980 | 19,471 | 10,338 9,845 | V ETHIER... | Giten Robertson.. | Pib. |
| Grey-Bruce... | 36,883 | 21,807 | 17.631 | 10,138 | E. A. Winkl |  |  |
| Grey Nor | 38,824 | 22.812 | 18,806 | 9,222 | P. V. Noble. | Shallow Lake | P.C. |
| Halton..... | 107,285 | ${ }_{67}^{67} 263$ | 53,120 | 25,213 | H. C. Harley | Oakville... | Lib. |
| Hamilton East. | 65, 287 | 35.053 70.402 | 26, 118 | 12.692 | J. C. Munro. | Hamilton. |  |
| Hamilton South | 121,181 | 70,402 41,997 | 54,632 30,939 | 22,736 13.247 | W. D. Howe | Hamilton. | N.D.P. |
| $\mathrm{H}_{\text {astinge-Front }}$ | 48,217 | 25, 305 | 17,744 | 11,290 | R. Webit. . | Namwood. |  |
| Hastings Sout | 70,806 | 36,943 | 30,978 | 14,824 | L. Gruls | Betleville. |  |
| Huron........ | 48,355 | 25,551 | 21.680 | 10,670 | R. E. Mckinley | Zurich... |  |
| Kenora-Rainy River | 72,775 | 36,558 | 26, 194 | 11,488 | J. M. Reib.. | Kenora. | Lib. |
| Kingetor | 76,485 | 42,993 | 32.563 | 16,402 | H. W. Dangorth. | Blenkeim, | P.C. |
| Lambton-Kent | 43,235 | 24,523 | 19.914 | 10,303 | M. T. McCotcheon..... | Florence. |  |
| Lambton We | 78,482 | 42,976 | 32,643 | 12,805 | W. F. For.... | Sarnic. |  |
| Lanark. | 40.081 | 22,511 | 17,886 | 9,784 | D. M. Code. | Smiths Fall |  |
| Lseds. | 47,121 | 27,466 | 21,580 | 10,365 | J. Matheson. | Brookville.. | Lib. |

10.-EHectoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Mlected at the Twenty-seventh General Election, Nov. 8, 1965 and Revised to Oct. 1, 1966-continued

10.-Electoral Districts, Voters on Llst and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-seventh General Election, Nov, 8, 1965 and Revised to Oct. 1, 1968-continued

| Province and Electoral District | $\begin{aligned} & \text { Popu- } \\ & \text { lation, } \\ & \text { Census } \\ & 1961 \end{aligned}$ | Voters on | Total <br> Votes <br> Polled | Votes <br> Polled by Member | Name of Member | P.O. Address | Party Aftiliation |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. |  |  |  |
| Manltoha-concluded |  |  |  |  |  |  |  |
| Spring6eld | 48,343 | 27,379 | 20,599 | 8,001 | E. Schreter. | East St. Paul. | N.D.P. |
| Wimipeg North. |  | 86,548 | 48,652 | 22,950 | D. OrLkow. | West Kildonan | N.D.P. |
| Winnipeg North Centre | 78.615 | 39,517 | 25,821 | 14,056 | S. H. Knowies. | Winnipeg. .... | N.D.P. |
| Winnipeg South. | $113.629$ | ${ }^{68}$,738 | 54,669 | 23,576 | L. R. Sherman. | Winnjpeg. | P.C. |
| Winnipeg South Centre. | 85, 288 | 50,186 | 36,832 | 15,296 | Hon. G. Ceurchill | Winnipeg. | P.C. |
| Saskatchewan- <br> ( 17 members) <br> Assiniboia |  |  |  |  |  |  |  |
| Assiniboia Hamboldt-Melfort..... | 45,553 | 23,836 | 20,567 | 7,913 | L. Watson. | Avonlea. | P.C. |
| Humboldt-MeifortTisdale........... | 48,243 | 25,510 | 20,685 | 11,256 | R. |  |  |
| Kindersley | 47,960 | 24,359 | 20.609 | 8,223 | R. W. CANTELON. | Unity |  |
| Mackemzie | 44,479 | 22,380 | 17,184 | 8,760 | S. J. Korchingei | Rama | P. |
| Meadow La | 37,937 | 17,801 | 12,893 | 6.919 | A. C. Cadreu. | Spiritwood | P. |
| Melvile............... | 40,255 | 23,632 | 19.103 | 8,843 | J. N. Ormieto | Cupar..... | P.C. |
| Moose Jaw-Lake Centre | 81,960 | 51,060 | 40.107 | 18,087 | J. E. Pascor. | Moose | P. |
| Moose Mountain........ | 44,404 58,493 | 23, 5160 | 19, 1770 | 8,781 15 | R. R. Soutank. | Gainsborough | P.C. |
| Prince Albert.......... | 58,493 | 31,329 | 24,183 | 15,635 | Rt. Hon. J. G. Diefenbakiz* | Prince A |  |
| Qu'Appel | 39,362 | 21.041 | 16,767 | 9,579 | Hon. A. Hamilton | Indian Head |  |
| Regina City | 89, 293 | 48,936 | 38,517 | 15,437 | K. More. | Regina. |  |
| Rosetown- | 47,208 46,954 | 24, 888 | 20,645 18,170 | 8,658 10,042 | R. D. McLicland | Lorebu | P. |
| Saskatoon. | 95,575 | 60,689 | 47,447 | 21,036 | L. Bra | Saskatoo |  |
| Swift Current-Maple |  |  |  |  |  |  |  |
| Creek | 56,528 | 31,157 | 25,245 | 11,227 | J. Mclntose. | Swift Curren | P.C. |
| The Batcle | 51,613 | $26+394$ | 21.025 | 10.297 | A, Horner. | Blaine Lake |  |
| Yorkton. | 49,364 | 28,376 | 22,334 | 10,561 | G. D. Clancy | Raymore. | P.C. |
| Alberta( 17 members) <br> Acadia |  |  |  |  |  |  |  |
| Acadia. | 47,724 | 24, 130 | 18.979 | 10.813 | J. Horner. | Pollockville | P.C. |
| Athabagca............. | 69, 184 | 28, 622 | 21,690 | 11,652 | J. Bjag.. | Westlock. |  |
| Battle River-Camrose. | 58,655 | 31,508 | 24, 293 | 14,015 | C. S. Smallwood | Irma |  |
| Calgary North | 134,783 | 77,284 | 23, 5835 | 12,611 | E. M. Woolliams Hon. D. S. Hark | Calgary |  |
| Calgary Sout | 124,248 | 74,469 | 53,274 | 20,640 | H. R. Ballard | Calgary |  |
| Edmonton East. | 82,248 | 45,609 | 30,509 | 13,596 | W. Skoreyoo. | Edmonton. |  |
| Edmonton-Strathcona | 121,124 | 71,989 | 35,646 | 21.004 | T. NUGENT. | Edmonton. |  |
| Edmonton Wes | 150,257 | 85, 373 | 62,457 | 30,548 | Hoa. M. Lambert | Edmonton. | P. |
| Jasper-Edso | 70,088 | 35,127 | 25,492 | 14,909 | H. M. Horner. | Barrbead. | P.C. |
| Lethbridg | 69, 175 | 32, 522 | 24.877 | 10, 147 | D. R. Gundlock | Lethbridg | P. |
| Macleod. | 50,966 | 25,291 | 19,722 | 8,706 | L. E. Kindt. | Nanton |  |
| Peace River | 75,811 | 40,610 | 27, 874 | 14,960 | G. Baldwin | Meace Rive |  |
| Red Deer. | 63,205 | 34,511 | 28,370 | 12,383 | R. N. Teompson* | Red Deer, |  |
| Vegreville | 42,798 | 23, 109 | 17,524 | 12,163 | F. J. W. Fane..... | Vegreville |  |
| Wetaskiwin | 55,424 | 28,751 | 21,607 | 10,754 | H. A. Moore. | Wetaskiwi | C. |
| British Columbia- <br> ( 22 members) <br> Burnaby-Coquitlam |  |  |  |  |  |  |  |
| Bumaby-Roquitram | 90,041 | 85,783 | 42,974 | 22, 5858 | T. C. Dovelas* | Burnaby. |  |
| Cariboo. | 82, 173 | 48,986 | 33, 067 | 12,344 | B. R. Lero | Prince Ge |  |
| Cosat-Capilano | 113,734 | 71,890 | 54,721 | 26, 172 | J. Davis. | West Vancouver.'. |  |
| Comox-Alberni. | 71,886 | 41, 616 | 29,937 | 13,393 | T. S. Barnget. | Alberni....... | N.D.P. |
| Essquirasit-Saanich | 74,979 | 48, 209 | 38,514 | 14,787 | G. L. Ceatterton | Saanich. | P.C. |
| Kamloopa.. | 73,446 | 46,956 42.840 | 36, 351 | 12, 11.71 | A. B. P^tterson.... | Abbotsford |  |
| Kootenay East | 41,449 | 22,473 | 17,723 | 6.574 | J. BYRNE........... | Kimberl |  |
| Kootensy Weat....... | 57,136 | 31,675 | 21,870 | 8,481 | H. W. Herridge | Nakusp. | N.D.P. |
| Nanaimo-CowichanThe Islands........ | 59,786 | 36,349 |  |  | C. Cameron |  |  |
| New Westminster | 142, 803 | 84, 183 | 63,661 | 27,574 | B. Mather | Lantav |  |
| Okamagan Boundary ... | 66,180 | 39,767 | 30,971 | 9,499 | D. V. PJGE. | Oliver. |  |

10.-Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-seventh General Election, Nov. 8, 1965 and Revised to Oct. 1, 1966-concluded

| Province or Territory and <br> Electoral District | Population, Census 1961 | Voters on List | Total <br> votes <br> Polied | Votes Polled by Member | Name of Member | P.O. Address | Party Affil: ation |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. |  |  |  |
| British Columbiaconcluded |  |  |  |  |  |  |  |
|  | 36,009 | 20,677 | 15,758 | 4,294 | H. Jornston | Salmon Arm | S.C. |
| Skeena................. | 58.740 | 29,925 | 21,592 | 11,477 | F. Howard. | Terrace...... | N.D.P. |
| Vancouver-Burrard | 60,347 | 40,005 | 28, 188 | 10, 807 | R. Basford. | Vancouver |  |
| Vancouver Centr | 41.920 <br> 59 | 34,615 31,080 | 22,793 21.078 | 9,008 | Hon. J. R. Nrcholson | Vancouver | Nib. ${ }_{\text {L }}$ |
| Vancouver-Kingsway | 67,228 | 38,224 | 28,245 | 13.730 | Grace MacInnis | Vancouver. | N.D.P. |
| Vancouver Quadra. | 69.981 | 41,068 | 33.414 | 12,895 | G. Deachman | Vancouver | Lib. |
| Vancouver South.. | 86,069 | 55,548 | 43,163 | 18,669 | Hon. A. Laing | Vancouver | Lib. |
| Victoria.. | 86,426 | 54,215 | 44,049 | 13,930 | D. W. Groos. | Victoria. . | Lib. |
| Fukon Territory- <br> (1 member) <br> Yukon. | 14,623 | 6,660 | 5,760 | 3,134 | Ebik Niglgen. | Whitehorse. | P.C. |
| Northwest Territories- <br> ( 1 member) Northwest Territories. . | 22,998 | 12,326 | 9,403 | 5,194 | R. J. Orange. | Yellowknife | Li |

11.-By-elections from the Date of the Twenty-seventh General Election, Nov. 8, 1965 to Oct. 1, 1961

| Electoral District and Province | $\begin{gathered} \text { Date } \\ \text { of } \\ \text { By-election } \end{gathered}$ | $\begin{gathered} \text { Name } \\ \text { of } \\ \text { New Member } \end{gathered}$ | P.O. Addreas | Party Afiliation |
| :---: | :---: | :---: | :---: | :---: |
| Burin-Burgeo, Nfid.... | Sept. 19. 1966 | Din Jhminson.. | Swift Current.,........ | Lib. |
| Grand Fallg-White BayLabrador, Nif......... | Sept. 19, 1966 | Andrew Catwood. | Wabush............... | Lib. |
| Nicolet-Ysmaska, Que. | Sept. 19, 1966 | Florian Cotte. | Ste-Brigitte-desSaults. | Lib. |

[^35]Indemnities and Allowances.-Members of the Senate and House of Commons receive a sessional allowance at the rate of $\$ 12,000$ per annum. In addition, for each session of Parfiament, they may be paid travelling expenses between their place of residence or constituency and Ottawa as may be required for the performance of their duties as members of the Senate and House of Commons. Senators receive an annual expense allowance of $\$ 3,000$ and members of Parliament receive an expense allowance of $\$ 6,000$, neither of which is subject to income tax, and is payable quarterly. The member of the Senate occupying the recognized position as Leader of the Government in the Senate is paid, in addition to his sessional allowance, an annual allowance of $\$ 10,000$ and to the member of the Senate occupying the recognized position as Opposition Leader in the Senate there is paid, in addition to his sessional allowance, an annual allowance of $\$ 6,000$; but if the Leader of the Government is in receipt of a salary under the Salaries Act the annual allowance is not paid. The remuneration of the Prime Minister is $\$ 25,000$ a year and of a Cabinet Minister and the Leader of the Opposition in the House of Commons $\$ 15,000$ a year in addition to the sessional and expense allowances each receives as a mem-
ber of Parliament. The remuneration of a Minister without Portfolio is $\$ 7,500$ a year in addition to the sessional and expense allowances, the latter being not taxable. Additional annual allowances of $\$ 1,000$ (beyond the above-noted sessional allowance) are provided to each Leader of a Party having a recognized membership of twelve or more persons in the House of Commons other than the Prime Minister and the member occupying the recognized position as Leader of the Opposition in the House of Commons and, likewise, to the Chief Government Whip and to the Chief Opposition Whip in the House of Commons. The Speaker of the Senate and the Speaker of the House of Commons each receives, besides the sessional allowance and expense allowance, a salary of $\$ 9,000$ per annum. The Deputy Speaker of the House of Commons receives a salary of $\$ 6,000$ per annum. The Speakers of the Senate and the House of Commons are also entitled to $\$ 3,000$ in lieu of residence and the Deputy Speaker of the House of Commons an allowance of $\$ 1,500$ in lieu of residence; these allowances are not taxable. The Deputy Chairman of Committees receives an annual allowance of $\$ 4,000$. Parliamentary Secretaries to the Ministers of the Crown receive an annual allowance of +000 a year, in addition to their sessional and expense allowances. A motor vehicle allowance of $\$ 2,000$ is paid to each Minister of the Crown and to the recognized Leader of the Opposition in the House of Commons, and a motor vèhicle allowance of $\$ 1,000$ is paid to the Speakers of the Senate and of the House of Commons; these allowances are not taxable.

A member of Parliament contributes, by reservation, 6 p.c. of bis full sessional indemnity toward his retirement allowance, which is based on five twelfths of the total contributions, paid or elected to be paid; to the widow of an ex-member is paid three fifths of the allowance paid or payable to the ex-member at the time of his death. The maximum allowance payable to an ex-member is $\$ 9,000$ per annum and the maximum payable to the widow of an ex-member is $\$ 5,400$ per annum.

An Aet to make provision for the retirement of members of the Senate (SC 1965, c. 4) entitles a Senator appointed after June 2, 1965 to become a contributor under the provisions of the Members of Parliament Retiring Act. Senators appointed prior to that date and who bave not attained the age of 75 years, who elect under the provisions of this Act, are also entitled to become contributors. Under the provisions of the Retirement Act, a Senator contributes, by reservation, 6 p.c. of his sessional indemnity to the Consolidated Revenue Fund. A Senator appointed before June 2, 1965 who (a) within one year of attaining the age of 75 years resigns his place in the Senate or (b) resigns due to some permanent infirmity disabling him from performing his duties in the Senate, may be granted an annuity equal to two thirds of his sessional indemnity for life. The widow of a person granted such an annuity may receive an annuity equal to one third of the annuity to the ex-member of the Senate.

Every former Prime Minister who held office for four years will receive from the Consolidated Revenue Fund an allowance of two thirds of the annual salary provided for Prime Ministers under the Salaries Act, the allowance to commence when the former Prime Minister ceases to hold office, or attains the age of 70 years, whichever is the later, and to continue during his lifetime. The widow of a Prime Minister will receive an annual payment of one third of the allowance that was being paid or that would have been paid to her husband, where he dies without receiving the allowance, such allowance to commence immediately after the death of her husband and to continue during her natural life or until her remarriage. None of these allowances is payable while the recipient is a Senator or a member of the House of Commons.

The Federal Franchise.--The present federal franchise laws are contained in the Canada Elections Act (SC 1960, c. 39). The franchise is conferred upon all Canadian citizens or British subjects, men and women, who have attained the age of 21 years, are ordinarily resident in the electoral district on the date of the issue of the writ ordering an
election and, in the case of British subjects other than Canadian citizens, have been ordinarily resident in Canada for twelve months prior to polling day at such election. Persons denied the right to vote are:-
(1) the Chief Electorat Officer and the Assistant Chief Etectoral Officer;
(2) judges appointed by the Governor General in Council;
(3) the returning officer for each electoral district;
(4) persons undergoing punishment as inmates of any penal institution for the commission of any offence;
(5) persons restrained of their liberty or deprived of the management of their property by reason of mental disease; and
(6) persons disqualified under any law relating to the disqualification of electors for corrupt and illegal practices.

Prior to July 1, 1960, the list of persons denied the right to vote included "Indians ordinarily resident on an Indian reserve who were not members of His Majesty's Forces in World Wars I or II or who did not execute a waiver of exemption under the Indian Act from taxation on and in respect of personal property" Legislation proclaimed on the above-mentioned date confers upon all Indians who have attained the age of 21 years the right to vote at federal elections, without taking from them any of the rights and privileges to which they are entitled under the Indian Act. The Eskimos who are Canadian citizens possess the right to vote in federal elections, and the assumption of that right in the farflung communities of the Canadian Far North has grown with Government establishment of electoral districts and polling facilities.

The Canadian Forces Voting Rules set out in Schedule II to the Canada Elections Act prescribe voting procedure for members of the Armed Forces of Canada and also for veterans in receipt of treatment or domiciliary care in certain institutions.

## 12.-Voters on the Lists and Votes Polled at the Federal General Elections of 196\%, 1863 and 1985

Nors.-Corresponding statistics for the General Elections of 1911, 1917, 1921 and 1925 are given in the 1926 Year Book, p. 82: those for 1926 in the 1945 edition, p. 6 ; those for 1930 and 1935 in the 1948 -49 edition, p. 94 ; those for 1940 in the 1956 edition, p. 81 ; those for 1945 in the $1957-58$ edition, p. 57 ; those for 1949, 1953 and 1957 in the 1962 edition, p. 71; and those for 1958 in the 1086 edition, p. 80.

| Province or Territory | Voters on the Lists |  |  | Votes Polled |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1962 | 1863 | 1985 | 1962 | 1963 | 1995 |
|  | No. | No. | No. | No. | No. | No. |
| Newfoundiand, | 215,565 | 221,321 | 226,082 | 155,263 | 152,175 | 148,302 |
| Prince Edward Island. | 56,542 | 57.029 | 56,484 | 73,5091 | 69.4861 | 72,0061 |
| Nova Scotia. | 398,161 | 401,874 | 401,521 | $428,556^{2}$ | $419,352^{2}$ | 420,146 |
| New Brunswiek. | 302,313 | 304,732 | 304,734 | 252,053 | 245,557 | 244,184 |
| Quebec. | 2,728,191 | 2,807,634 | 2,933,031 | 2,117,644 | 2,143,246 | 2,073,314 |
| Ontario. | 3,397,647 | 3,455,363 | 3,609,895 | 2,719,020 | 2,799,870 | 2,770,222 |
| Manitoba | 508,920 | 516,525 | 517,928 | 393.023 | 401,870 | 882,362 |
| Saskatchewan. | 502,495 | 505,551 | 508,733 | 426.426 | 419,973 | 404,631 |
| Alberta. | 680,253 | 700,920 | 725,447 | 505,752 | 552,164 | 534,870 |
| British Columbis. | 891,886 | 921,074 | 972,068 | 691,930 | 740,220 | 731,438 |
| Yukon Territory ${ }^{\text {a }}$. | 6,762 | 6,878 | 6,660 | 5,978 | 6,051 | 5,760 |
| Northwest Territories4. | 11,790 | 11,856 | 12,326 | 8,502 | 8,603 | 9,403 |
| Totals. | 2,700,325 | \$,510,75\% | 10,274, 904 | 7,772,456 | 7,958,436 | 7,706,728 |

[^36]
## Subsection 3.-The Judiciary

## The Federal Judiciary

The Parliament of Canada is empowered by Sect. 101 of the British North America Act from time to time to provide for the constitution, maintenance and organization of a general Court of Appeal for Canada and for the establishment of any additional courts for the better administration of the laws of Canada. Under this provision, Parliament has established the Supreme Court of Canada, the Exchequer Court of Canada and certain miscellaneous courts.

Supreme Court of Canada.-This Court, first established in 1875 and now governed by the Supreme Court Act (RSC 1952, c. 259), consists of a chief justice, who is called the Chief Justice of Canada, and eight puisne judges. The chief justice and the puisne judges are appointed by the Governor in Council and they hold office during good behaviour but are removable by the Governor General on address of the Senate and the House of Commons. They cease to hold office upon attaining the age of 75 years. The Court sits at Ottawa and exercises general appellate jurisdiction throughout Canada in civil and criminal cases. The Court is also required to consider and advise upon questions referred to it by the Governor in Council and it may also advise the Senate or the House of Commons on private Bills referred to the Court under any rules or orders of the Senate or of the House of Commons.

Appeals may be brought from any final judgment of the highest court of final resort in a province in any case where the amount or value of the matter in controversy exceeds the sum of $\$ 10,000$. An appeal may be brought from any other final judgment with leave of the highest court of final resort in the province; if such court refuses to grant leave, the Supreme Court of Canada may grant leave to appeal. The Supreme Court may grant leave to appeal from any judgment whether final or not. Appeals in respect of indictable offences are regulated by the Criminal Code. Appeals from federal courts are regulated by the statute establishing such courts. The judgment of the Supreme Court of Canada in all cases is final and conclusive.

## 13.-Chlef Justice and Judges of the Supreme Court of Canada, as at Oct. 1, 1966

(In order of seniority)

| Name | Date of Appointment |
| :---: | :---: |
| Hod, Mr. Robert Tascheread, P.C., Chief Justice of Canada. | Apr. 22, 19631 |
| Hon. Mr. Justice John R. Cartwrigat. | Dec. 23, 1949 |
| Hom. Mr, Justice J. H. Grrald Fadteex | Dec. 23, 1949 |
| Hom. Mr. Justice Douglas Charles Abbotr | July I, 1954 |
| Hon. Mr. Justice Ronald Martland | Jan. 15, 1958 |
| Hon. Mr. Justice Wrifred Judson | Feb. 5, 1958 |
| Hod. Mr. Justice Roland A, Ritchie. | May 5, 1959 |
| Hon. Mr. Justice Emmett M. Hall | Nov. 23, 1962 |
| Hon, Mr. Justice Wishart Flett Spence | May 30, 1963 |

[^37]Exchequer Court of Canada.-The Exchequer Court was first established in 1875 as part of the Supreme Court of Canada but is now a separate court governed by the

Exchequer Court Act (RSC 1952, c.98). The Court consists of a president and six puisne judges who are appointed by the Governor in Council. The president and the puisne judges hold office during good behaviour but may be removed by the Governor General on address of the Senate and the House of Commons. They cease to hold office upon attaining the age of 75 years. The Court sits at Ottawa and also at any other place in Canada where sittings may be fixed by the Court. The jurisdiction of the Court extends to cases where claims are made by or against the Crown in right of Canada. Proceedings against the Crown are taken by petition of right pursuant to the Petition of Right Act (RSC 1952, c. 210).

An appeal lies to the Supreme Court of Canada from any final judgment of the Exchequer Court in which the amount in controversy exceeds $\$ 500$; an appeal also lies with leave of the Supreme Court in certain cases where the amount in controversy does not exceed $\$ 500$ or where the judgment is not final.

The Exchequer Court also exercises admiralty jurisdiction in Canada. This was first conferred in 1891 by the Admiralty Act (SC 1891, c. 29) and is now governed by the Admiralty Act (RSC 1952, c. 1). Under this statute, the Exchequer Court is continued as a Court of Admiralty. The president and puisne judges of the Exchequer Court exercise admiralty jurisdiction throughout the whole of Canada. In addition, Canada is divided into various admiralty districts; a district judge in admiralty is appointed for each district. Appeals to the Supreme Court of Canada from judgments of the president or the puisne judges are governed by the general appeal provisions in the Exchequer Court Act. Appeals may be taken from a final judgment of a district judge in admiralty either to the Exchequer Court or direct to the Supreme Court of Canada.

Miscellaneous Courts.-Railway Act.-The Railway Act, 1903 (RSC 1952, c. 234) established the Board of Railway Commissioners for Canada as a court of record; by the Transport Act, 1938 (RSC 1952, c. 271) the name was changed to the Board of Transport Commissioners for Canada. This court exercises jurisdiction with respect to railway matters. The Governor in Council is given jurisdiction to vary any order of the Board and an appeal lies from the Board to the Supreme Court of Canada upon a question of jurisdiction or a question of law.

Bankruptcy Act.-By virtue of Sect. 91 (21) of the British North America Act, 1867, Parliament has exclusive legislative jurisdiction in relation to bankruptcy and insolvency. By the Bankruptcy Act (RSC 1952, c. 14) the superior courts of the provinces are constituted bankruptcy courts; original jurisdiction is conferred upon the trial courts and appellate jurisdiction is conferred upon the appeal courts of the provinces.

Income Tax Act and Estate Tax Act.-By the Income Tax Act (RSC 1952, c. 148) the Tax Appeal Board is established consisting of a chairman and not fewer than two or more than four members with jurisdiction over appeals against income tax assessments. A further appeal may be taken to the Exchequer Court. Under the Estate Tax Act (SC 1958, c. 29) the Tax Appeal Board also has jurisdiction to hear appeals from assessments under that Act.

National Defence Act.-The Court Martial Appeal Court was established in 1959 by an amendment to the National Defence Act (SC 1959, c. 5). The judges of the Court are not fewer than four judges of the Exchequer Court of Canada designated by the Governor in Council and such additional judges of a superior court of criminal jurisdiction as are appointed by the Governor in Council. The Governor in Council designates one of the judges to be president of the Court. The Court hears appeals from courts martial respecting the legality of a finding of guilty on any charge and the legality of a sentence passed by a court martial. An appeal lies from the Court Martial Appeal Court to the Supreme Court of Canada on a question of law only.

## Provincial and Territorial Judiciaries*

Certain provisions of the British North America Act govern to some extent the provincial judiciaries. Under Sect. 92(14) the legislature of each province exclusively may make laws in relation to the administration of justice in the province including the constitution, maintenance and organization of provincial courts both of civil and of criminal jurisdiction. Sect. 96 provides that the Governor General shall appoint the judges of the superior, district and county courts in each province, except those of the courts of probate in Nova Scotia and New Brunswick. Sect. 100 provides that the salaries, allowances and pensions of judges of the superior, district and county courts (except the courts of probate in Nova Scotia and New Brunswick) are to be fixed and provided by the Parliament of Canada and these are set out in the Judges Act (RSC 1952, c. 159 and amendments). Under Sect. 99, the judges of the superior courts hold office during good behaviour but are removable by the Governor General on address of the Senate and the House of Commons. They cease to hold office upon attaining the age of 75 years. The tenure of office of district and county court judges is fixed by the Judges Act as being during good behaviour and their residence within the area for which the court is established.

All provinces have minor courts with limited civil and criminal jurisdiction, the presiding officers of which are appointed by provincial authority as, for example, justices of the peace, magistrates and juvenile court judges. Except in Quebec, there are county or district courts of each province with limited jurisdiction varying from $\$ 500$ to $\$ 2,500$ in amount. Each province has a superior court with virtually unlimited jurisdiction variously known as Court of Queen's Bench, Supreme Court, Superior Court, etc. There is also a Court of Appeal in each province.

The Yukon Act and the Northwest Territories Act each provide for a superior court of record in and for the Territory, called the Territorial Court, and consisting of one or more judges appointed by the Governor in Council. The judges of the Territorial Court of the Yukon Territory are ex officio judges of the Territorial Court of the Northwest Territories and vice versa. There is a Court of Appeal in each of the Territories. Police magistrates and justices of the peace have jurisdiction in minor civil and criminal cases.

## Section 2.-Provincial and Territorial Governments $\dagger$

In each of the provinces, The Queen is represented by a Lieutenant-Governor appointed by the Governor General in Council. The Lieutenant-Governor acts on the advice and with the assistance of his Ministry or Executive Council which is responsible to the Legislature and resigns office under circumstances similar to those described on p. 86 concerning the Federal Government.

The Legislature of each province is unicameral, consisting of the Lieutenant-Governor and a Legislative Assembly, except for the Province of Quebec where there is a Legislative Council as well as a Legislative Assembly. The Legislative Assembly is elected by the people for a statutory term of five years but may be dissolved within that period by the Lieutenant-Governor on the advice of the Premier of the province.

The source of legislative authority of the Provincial Legislatures is the British North America Act, 1867 (Br. Stat. 1867, c. 3 and amendments). Under Sect. 92 of the Act, the Legislature of each province exclusively may make laws in relation to the following matters: amendment of the constitution of the province except as regards the Lieutenant-

[^38]Governor; direct taxation within the province; borrowing of money on the credit of the province; establishment and tenure of provincial offices and appointment and payment of provincial officers; the management and sale of public lands belonging to the province and of the timber and wood thereon; the establishment, maintenance and management of public and reformatory prisons in and for the province; the establishment, maintenance and management of hospitals, asylums, charities and eleemosynary institutions in and for the province, other than marine hospitals; municipal institutions in the province; shop, saloon, tavern, auctioneer and other licences issued for the raising of provincial or municipal revenue; local works and undertakings other than interprovincial or international lines of ships, railways, canals, telegraphs, etc., or works which, though wholly situated within one province, are declared by the Federal Parliament to be for the general advantage either of Canada or of two or more provinces; the incorporation of companies with provincial objects; the solemnization of marriage in the province; property and civil rights in the province; the administration of justice in the province including the constitution, maintenance and organization of provincial courts both of civil and of criminal jurisdiction including procedure in civil matters in these courts; the imposition of punishment by fine, penalty or imprisonment for enforcing any law of the province relating to any of the aforesaid subjects; generally all matters of a merely local or private nature in the province.

Further, in and for each province the Legislature exclusively may, under Sect. 93, make laws in relation to education subject to certain restrictions relating to the establishment of schools by religious minorities. These powers with similar restrictions were conferred on the more recently admitted provinces on their inclusion in the federation.

The Provincial Legislatures may also make laws under Sect. 95 in relation to agriculture and immigration, subject to any laws of the Parliament of Canada in relation to these subjects.

Provincial Franchise.-Details regarding qualifications and disqualifications of the franchise are contained in the Elections Act of each province. In general, every person, male or female, at a specified age ( 18 to 21 years) who is a Canadian citizen or other British subject, who complies with certain residence requirements in the province and the electoral district of polling and who falls under no statutory disqualifications, is entitled to vote. Voting privileges are given to persons in Quebec and Saskatchewan at the age of 18, in Newfoundland, Alberta and British Columbia at 19 years, and in the remaining provinces at 21 years.

## Subsection 1.-Newfoundland

The Government of Newfoundland consists of a Lieutenant-Governor, an Executive Council and a Legislative Assembly, The Legislative Assembly has 42 members elected for a term of five years. The Legislature elected Sept. 8, 1966 is the 34th in the history of Newfoundland and the 6th since Confederation.

Since the date of Confederation, Mar. 31, 1949, the province has had four LieutenantGovernors: the Hon. Sir Albert Joseph Walsh commissioned Apr. 1, 1949; the Hon. Lt.-Col. Sir Leonard Outerbridge commissioned Sept. 5, 1949; the Hon. Campbell Macpherson commissioned Dec. 16, 1957; and the Hon. Fabian O'Dea commissioned Mar. 1, 1963. The first Ministry, formed on July 13, 1949 under the leadership of the Hon. Joseph R. Smallwood, was still in office on Oct. 1, 1966.

The Premier receives a salary of $\$ 10,000$ and the other Cabinet Ministers $\$ 9,000$ per annum, plus a sessional indemnity of $\$ 4,333.33$ and a travelling and expense allowance of $\$ 2,166.66$. Each member of the House of Assembly receives a sessional indemnity of $\$ 4,333.33$ plus a travelling and expense allowance of $\$ 2,166.66$. An additional allowance of $\$ 3,000$ is made to the Leader of the Opposition.

## 14.-First Ministry of New foundland, as at Oet. 1, 1966

(Party standing at latest General Election, Sept. 8, 1966: 39 Liberal and 3 Progressive Conservative.)

| Office | Name | Date of First Appointment | Date of Present Appointment |
| :---: | :---: | :---: | :---: |
| Premier and Minister of Economic Development. | Ho | Apr. 1, 1949 | Apr. 1, 1949 |
| President of the Council. .................. | Hon. L. R. Cortis. | Apr. 1, 1949 | Sept. 8, 1966 |
| Minister of Mines, Agriculture and Resources | Hod. W. J. Keodar. | July 29, 1949 | May 1, 1957 |
| Minister of Public Works. | Hon. J. R. Cealeer. | Apr. 4, 1950 | May 1, 1957 |
| Minister without Por | Hon. P. J. Lewts | Dee. 15, 1951 | Dec. 15, 1951 |
| Minister of Finance | Hon, F W. Rowe. | May 21, 1952 | Dec. 7, 1964 |
| Minister without Porti | Hod. B. J. Abbotr | May 1, 1957 | Sept. 8, 1966 |
| Minister of Health | Hon. J. M. McGrati | Juiy 5, 1956 | Aug. 7, 1956 |
| Mjnister of Provincial | Hon. G. A. Frecker | Aug. 26, 1959 | Dec. 7, 1964 |
| Minigter of Fisheries | Hon. C. M. Lane. | June 12, 1961 | Feb. 15. 1983 |
| Minister of Figbways | Hon. E. S. Jones | Dec. 7, 1964 | Dec. 7, 1964 |
| Minister of Education | Hon. H. R. V. Earle | Dec. 7, 1964 | Dec. 7, 1964 |
| Minister of Municipal Affairs and Supply | Hon. J. C. Crosbie. | July 19, 1966 | Sept. 8, 1966 |
| Minister of Justice | Hon. T. A. Hickman | July 28, 1966 | Sept. 8, 1966 |
| Minister of Labrador Affairs | Hon. C. R. Grangrr | Aug. 1, i966 | Sept. 8, 1968 |
| Minister of Pablic Welf | Hon. Aidan Malone | Aug. 8, 1986 | Sept. 8, 1966 |
| Minister of Labour. | Hon. Clyde Wells. | Aug. 15, 1986 | Sept. 8, 1966 |

## Subsection 2.-Prince Edward Island

The Government of Prince Edward Island consists of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. Lieutenant-Governors from Confederation (1873) to 1959 are cited in the 1960 Year Book, p. 105; since that date, the position has been held by the Hon. F. W Hyndman, appointed effective Mar. 31, 1958, followed by the Hon. W J. MacDonald, appointed effective Aug. 1, 1963.

The General Assembly elected May 30, 1966 is the 51st in the history of Prince Edward Island Legislatures and the 26th since Confederation. It has 32 members from 16 electoral districts who serve for a statutory term of Give years. Each district elects one Councillor and one Assembly member. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 105.

The annual salary of the Premier is $\$ 8,000$ and that of a Cabinet Minister $\$ 5,000$. Each member of the Assembly is paid $\$ 2,000$ for each session attended by him and an additional $\$ 1,000$ tax free as indemnity for expenses and travelling. The Speaker is paid an additional $\$ 666.60$ and a further additional $\$ 333.40$ tax free as indemnity for expenses and travelling. The Leader of the Opposition is paid an additional $\$ 1,000$ and a further additional $\$ 500$ tax free for expenses and travelling.

## 15.-Legislatures of Prince Edward Island, 1945-66, as at Oct. 1, 1066

Norr.-Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 75; for 1924-35 in the 1938 edition, p. 110; and for 1936-43 in the 1963-64 edition, p. 82.

| Date of Election | Legislature | Number of Sessions | Date of First Opening | Date of Dissolution |
| :---: | :---: | :---: | :---: | :---: |
| Sept. 15, 1943 | 20th. | 4 | Feb. 15, 1944 | Oct. 27, 1947 |
| Dec. 11, 1947 | 21st. | 5 | Feb. 24, 1948 | Mar. 30, 1961 |
| Apr. 26, 1951 | 22nd. | 8 | Oct. 23, 1951 | Apr. 27, 1955 |
| May 25, 1955 | 23rd. | 4 | Feb. 2, 1956 | Aug. 3, 1959 |
| Sept. 1, 1959 | 24th. | 4 | Mar. 1, 1960 | Nov. 8, 1962 |
| Dec. 10, 1962 | 25th. | 4 | Mar. 14, 1963 | Apr. 14, 1966 |
| May 30, 1966 | 20th. | 1 | 1 | 1 |

[^39]
# 16.-Twenty-sinth Ministry of Prince Ed ward Island, as at Oct. 1, 1966 

(Party standing at latest General Election, May 30 and July 11, 1966: 17 Liberals and 15 Progreesive Conservatives.)

| Office | Name | Date of First Appointment | Date of Present Appointment |
| :---: | :---: | :---: | :---: |
| Premier and Attorney and Advocate General | Hon. Alex B. Campbele. | July 28, 1966 | Juily 28, 1968 |
| Minister of Public Works and Minister of Highways. | Hon. Grorge J. Fbrgubon....... | July 28, 1866 | July 28, 1968 |
| Minister of Education and President of the Executive Council. | Hon. Gordon L. Bennety, | July 28, 1966 | July 28, 1966 |
| Provincial Secretary and Provincial Treasurer. | Hon. T. Earle Hicket. | July 28, 1966 | July 28, 1966 |
| Minister of Health and Minister of Municipal Affairs | Hon. Keir Cuarg. | June 11, 1953 | July 28, 1966 |
| Minister of Indusiry and Natural Resources and Minister of Fisberies. | Hon. Cectl A. Mulbr............ | July 28, 1966 | July 28, 1966 |
| Minister of Welfare and Minister of Tourist Development. | Hom. M. Lorne Bonnell. | June 16, 1955 | July 28, 1966 |
| Minister of Labour. | Hod. J. Elmier Blanchard. | July 28. 19060 | July 28, 1980 |
| Minister of Agriculture. | Hon. Daniel J. MacDonald. | July 28, 1966 | July 28, 1966 |

## Subsection 3.-Nova Scotia

The Government of Nova Scotia consists of a Lieutenant-Governor, an Executive Council and a House of Assembly. Lieutenant-Governors from Confederation (1867) to 1959 are cited in the 1960 Year Book, p. 106; since that date the position has been held by Maj.-Gen. the Hon. E. C. Plow, commissioned to office Sept. 1, 1958, followed by the Hon. H. P. MacKeen, commissioned to office Mar. 1, 1963.

The Legislature has 43 members elected for a maximum term of five years. The Legislature elected Oct. 8, 1963 is the 48th in Nova Scotia's history and the 25th since Confederation. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 107; the present Premier assumed office in 1956.

The Premier of the province receives a salary of $\$ 12,000$ per annum and each Cabinet Minister a salary of $\$ 10,000$ per annum and $\$ 800$ per annum as expenses of representation. Each member of the House of Assembly receives a sessional indemnity of $\$ 4,000$ and an allowance of $\$ 2,000$ for expenses incidental to the discharge of his duties. The Leader of the Opposition receives an allowance of $\$ 7,200$ and an $\$ 800$ representation allowance in addition to bis sessional indemnity.

## 17.-Legislatures of Nova Scotia, 1945-66, as at June 3e, 1966

Nors.-Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 76; for 1924-33 in the 1938 edition, p. 111; and for 1939-44 in the 1963-64 edition, p. 83.


[^40]
## 13.-Seventeenth Ministry of Nova Scotia, as at June 30, 1966

(Party standing at lateat General Election, Oct. 8, 1963:39 Progreasive Conservative and 4 Liberal.)

| Office | Name | Dste of First Appointment | Date of Present Appointment |
| :---: | :---: | :---: | :---: |
| Premier and Minister of Edaction. | Hon. R. L. Stanfigld. | Nov. 20, 1956 | Nov. 20, 1956 |
| Minister of Finance and Economica and |  |  |  |
| Chairman of the Nova Scotia Power Commisgion. | Hod. G. I. Smiph. | Nov. 20, 1956 | (May 2. 1962 |
| Attorney General and Minister of Public | Hod. C. I. Smin. |  | (Nov, 20, 1956 |
| Health.......................... | Hon, R. A. Donamos | Nov. 20, 1056 | Nov. 20, 1256 |
| Minister of Pubic Works and minister of Highwayz. | Hon, B. T. Pree. | Nov. 20, 1956 | (Nov. 20, 1956 |
| Minister of Lands and Forests and Minister |  | Nov. 20, 1956 |  |
| of Fisheries................................ | H | Nov. 20, 1956 | July 8, 1964 |
| Minister of Labour | Hon. N. L. Ferodsgo | Nov. 20, 1956 | May 2, 1962 |
| Minister of Trade and Industry | Hon. W. S. Kbnnedy Jones. | Apr. 21, 1980 | Suly $\begin{array}{ll}\text { May } & 6,1964 \\ & 2,1962\end{array}$ |
| Minister without Portfolio | Flod. G. A. Burkidge. | Oct. 13, 1960 | $\begin{array}{lll}\text { May } & 13,1960\end{array}$ |
| Minister of Mines and Minister in Charge of the Liquor Control Act. | Hon. D. M. Sarte | Oct. 13, 1980 | $\begin{cases}\text { Dec. } & 12, \\ \text { Oct. } & 13, \\ 1960\end{cases}$ |
| Minister without Portiolio | Hon. D. R. Macleo | July 6, 1964 | July 6, 1964 |
| Minister of Public Welfare | Hon. J. M. Harding | July 6, 1964 | July 6, 1984 |
| Minister of Municipal Affairs................ | Hod. T. J. McKrodab | July 6, 1964 | July 6, 1964 |
| Mimieter of Aqricuture and Marketing and Minister under the Water Act. | Hon. I. W. Axeruey | July 6, 1964 | July 6, 1964 |
| Provincial Secretary and Minister in Charge of Civil Defence. | Hon. G. J. Doucs | July 6, 1964 | July 6, 1964 |

## Subsection 4.-New Brunswick

The Government of New Brunswick has a Lieutenant-Governor, an Executive Council and a House of Assembly. Lieutenant-Governors since Confederation (1867) to 1959 are cited in the 1960 Year Book, p. 108; since that date, the position has been held by the Hon. J. Leonard O'Brien, appointed June 6, 1958, followed by the Hon. John B. McNair, appointed June 9, 1965.

The Legislature elected Apr. 22, 1963 is the 45th in New Brunswick's history and the 18th since Confederation. It has 52 members who are elected for a statutory term of five years. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 108; the present Premier assumed office in 1960.

The Premier receives $\$ 7,500$ per annum in addition to the salary for any other portfolio he may hold. The salary of each Cabinet Minister is $\$ 10,000$ and the amount paid as indemnity to each member of the House of Assembly is $\$ 3,400$ plus an additional $\$ 1,700$ allowance for expenses. The Leader of the Opposition receives an additional $\$ 6,000$ and the Speaker receives an allowance of $\$ 4,000$ in addition to the regular indemnity.

## 10.-Legislatures of New Brunswick, 1945-66, as at June 30, 1968

Notr.-Legislatures from Confederstion to 1923 are given in the 1924 Year Book, p. 77; for 1924-35 in the 1938 edition, p. 112; and for 1936-44 in the 1983-64 edition, p. 84.

| Date of Election | Legislature | Number of Sessions | Date of First Opening | Date of Dissolution |
| :---: | :---: | :---: | :---: | :---: |
| Aug. 28, 1944 | 13th. | 4 | Feb. 20, 1945 | May 18, 1948 |
| June 28, 1948 | 14th | 4 | Mar. 8, 1949 | July 16, 1952 |
| Sept. 22, 1952 | 15th | 4 | Feb. 12, 1953 | Apr. 17. 1956 |
| June June 18, 27, 195950 | 17 l 17h. |  | Feb. 21, 1957 Nov. 17, 1960 | $\begin{array}{ll}\text { May } & 19,1960 \\ \text { Mar. } & 12,1963\end{array}$ |
| Apr. 22, 1963 | 18th | 1 | May 28, 1963 | Mar. 12, 1963 |

[^41]
## 20.-Twenty-third Ministry of New Brunswlek, as at June 30, 1966

(Party standing at lateat General Election, Apr. 22, 1983: 31 Liberal and 21 Progressive Conservative.)

| Offlee | Name | Date of First Appointment | Date of Present Appointment |
| :---: | :---: | :---: | :---: |
| Pramier. | Hon, Louls J. Rosichatd. | July 12. 1960 | July 12, 1960 |
| Attorney General. | Hon. Bernard A. Jean. | Apr. B, 1966 | Apr. 6, 1966 |
| Minister of Finance and Industry. | Hont L. G. DesBrishy | July 12, 1960 | July 12, 1960 |
| Provincisl Secretary | Hon. Jobeph E. LeBunc. | July 12, 1960 | May 18, 1965 |
| Minister of Publie Works | Hon. Andŕm. Richard. | July 12, 1960 | July 12, 1960 |
| Minister of Lands and Mines. | Hon. Willam R. Dufite. | July 12, 1960 | Mar. 22, 1986 |
| Minister of Agriculture | Hon. J. Adrien Levesque. | July 12, 1960 | July 12, 1960 |
| Minister of Health, | Hon. Dr. Georges L. Dumont. . | July 12, 1960 | July 12, 1960 |
| Minister of Labour | Hon. Kinnete J. Webber. | July 12, 1960 | July 12, 1960 |
| Minister of Education | Hod. W. W. Meldrum. | May 18, 1965 | Apr. 6, 1966 |
| Minister of Municipal Affairs. | Hon. L. Norbert Theriatit | May 18, 1965 | May 18, 1965 |
| Minister of Fisheries | Hon. R. Ernest Riceard | May 28, 1063 | July 8, 1963 |
| Minister of Youth and Wellare. | Hon. Jorn D. Maccalum | Mar. 22, 1966 | Mar. 22, 1966 |
| Chairman, New Brunawick Electric Power Commisaion. | Hon. H. Gratam Croc | July 12, 1960 | May 18, 1985 |

## Subsection 5.-Quebec

The Government of Quebec consists of a Lieutenant-Governor, an Executive Council and a bicameral legislature-the Legislative Council and the Legislative Assembly. Lieu-tenant-Governors from Confederation (1867) to 1959 are cited in the 1960 Year Book, p. 109 ; since that date the position has been held by the Hon. Onésime Gagaon, commissioned to office Feb. 14, 1958, followed by the Hon. Paul Comtois, commissioned to office Oct. 6, 1961, and the Hon. Hugues Lapointe, commissioned to office Feb. 22, 1966.

The Legislative Council has 24 members nominated for life by the Lieutenant-Governor in Council. The Legislative Assembly has 108 elected members and, Jike the Legislative Council, has the power to bring forward Bills relating to civil and administrative matters and to the amendment or repeal of existing laws. A Bill to be approved by the LieutenantGovernor must have received the assent of both Houses. Only the Legislative Assembly can bring forward a Bill requiring the expenditure of public money. The maximum life of a legislature is five years. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 110; the Hon. Jean Lesage became Premier in 1961 and the Hon. Daniel Johnson in 1966.

Each member of the Legislative Council and the Legislative Assembly receives a sessional indemnity of $\$ 10,000$, plus an expense allowance of $\$ 2,000$ to each Legislative Councillor and $\$ 6,000$ to each member of the Legislative Assembly. In addition to this sessional indemnity and allowance, the Premier receives an annual indemnity of $\$ 16,000$, an expense allowance of $\$ 4,000$ and a lodging allowance of $\$ 2,000$; Ministers with Portfolio each receive an annual indemnity of $\$ 12,000$ plus a $\$ 3,000$ expense allowance; Ministers without Portfolio each receive an indemnity of $\$ 8,000$ plus a $\$ 3,000$ expense allowance; the Speaker of the Legislative Assembly receives an indemnity of $\$ 10,000$, an expense allowance of $\$ 2,000$ and a lodging allowance of $\$ 1,000$ and the Deputy Speaker receives an indemnity of $\$ 5,000$ and an expense allowance of $\$ 1,000$; the Leader of the Opposition in the Assembly receives an indemnity of $\$ 10,000$, an expense allowance of $\$ 3,000$ and a lodging allowance of $\$ 2,000$; the Leader of the Government and the Leader of the Opposition in the Legislative Council each receive an additional sessional indemnity of $\$ 2,000$ plus a $\$ 3,000$ expense allowance.

## 21.-Legislatures of Quebec, 1945-66, as at June 30, 1966

Norg.-Legislatores from Confederation to 1923 are given in the 1924 Year Book, p. 78; for $1924-35$ in the 1938 edition, p. 113: and for 1936-44 in the 1963-64 edition, p. 85.

| Date of Election | Legislatare | Number of Sessions | Date of First Opening | Date of Dissolution |
| :---: | :---: | :---: | :---: | :---: |
| Aug. 8, 1944 | 22nd. | 4 | Feb. 7, 1945 | June 9, 1948 |
| July 28, 1948 | 23 rd . | 4 | Jan. 19, 1949 | May 28, 1952 |
| July 18, 1952 | 24 th | 4 | Nov. 12, 1955 | Apr. 25, 1956 |
| June 20, 1956 | 25 th . | 4 | Nov. 14. 1956 | Apr. 27, 19¢0 |
| June 22, 1960 | 27th. | 3 | Sept. 20. 1960 | Sept. 19.1962 |
| Nov. 15, 1962 | 27th. | 6 | Jan. 15, 1963 | Apr. 18, 1966 |

## 22.-Twenty-fourth Ministry of Quebec, as at June 30, 1scs

(Pariy standing at latest General Election, June 5, 1966: 56 Union Nationale, 50 Liberal and 2 Independent.)

| Office | Name | $\begin{gathered} \text { Date } \\ \text { of } \\ \text { Appointment } \end{gathered}$ |  |
| :---: | :---: | :---: | :---: |
| Prime Minister, President of the Executive Council. Minister of Federal-Provincial Affairs and Minister of Natural Resources. | Hon. Daniel Jorn | June | 18, 19 |
| Minister of Education and Minister of Justiee..... | Hod. Jean Jaceues Bea | Jupe | 16. 196 |
| Minister of Finance and Minister of Municipal Affairs. | Hon. Patl Dotors. . . . . . . . . . . . . . . . . . . . . | Jupe | 16, 1966 |
| Minister of Labour and Minister of Industry and Commerce................................. | Hon. Maubice Brlemmar |  |  |
| Minister of Revenu | Hon. Raymond Jobnston. | June | 16, 19 |
| Minister of Transport and Communicatio | Hon. Firnand Lizotfe. | June | 16. 1966 |
| Minister of Lands and Forests. | Hon, Clatode Gossslin. | Јune | 16, 1966 |
| Minister of Highways and Minister of Public Works. | Hon. Fernand Lamontarne. | June | 16, 1968 |
| Provincial Secretary | Hod. Yfes Gablas. | June | 16, 1968 |
| Minister of Health and Minister of Family and Social Welfare. | Hon. Jean-Patl Cloutira. | June | 16. 1966 |
| Minister of Touristo, Fish and Game | Hon. Gabrisl Loubier. | June | 16. 1966 |
| Minister of Cultural Affaira | Hon. Jean-Noel Trembla | June | 16. 1966 |
| Minister of Agriculture and Colonization......... | Hon. Clisment Vincent. | June | 16, 1966 |
| Minister without Portiolio (Industry and Commerce) | Hot. Francis Boudreat..... | Jupe June | 16,1966 16, 1986 |
| Minister without Portiolio (Pablic Works). | Hon, Ammand Russell. | June | 16, 1966 |
| Minister without Portiolio (Justice). | Hom. Abdand Maltais. | June | 16. 1966 |
| Minister without Portiolio (Health). | Hon. Dr. Rocr Boivin. | June | 16. 1886 |
| Minister without Portfolio (Education)........ | Hon. Marcel Masse. | June | 16, 1986 |
|  | Hod. Francots-Edgène Mathied. Hor. Paut Ahlard............. | June | $\begin{array}{ll}16, & 1986 \\ 16, & 1966\end{array}$ |

## 23.-Members of the Legislative Council of Quebec, as at June 30, 1966

(According to seniority)

| Name | Division | Date <br> of <br> Appointment |
| :---: | :---: | :---: |
| R. O. Grothé. | De Salaberry. | Dec. 20, 1927 |
| Hector Lafertí (Speaker) | Stadacona. | July 25, 1934 |
| J. L. Baribead.. | Shawinigan, | Jan. 14, 1938 |
| Philipre Brats. | Grandville. | Feb. ${ }^{\text {Jan. }}$ 14, 1940 |
| Fílix Messier. | De Lanaudiere | Feb. 12, 1942 |
| Edouard Asselta | Wellington.... | Jan. 23, 1846 |
| Gro. B. Foster. | Victoria. | Aug. 22, 1846 |
| Gúrald Martineau | Lauzon. | Aug. 22, 1946 |

23.-Members of the Legislative Council of Quebec, as at June 30, 196\%-concluded

| Name | Division | $\begin{gathered} \text { Date } \\ \text { of } \\ \text { Appointment } \end{gathered}$ |
| :---: | :---: | :---: |
| Patrice Tardif. | De la Valliere. | July 20,1952 |
| Edodard Masson. | Repentigny. | Mar. 12, 1953 |
| Albert Bouctard | La Salle.. | Nov. 24, 1954 |
| Jran Barrette... | Sorel.... | Oct. 19, 1955 |
| Albiny Pagoette. | Rougemont. | Oct. 29, 1958 |
| Jogn P. Rowat. | De Lorimie | Oct. 29, 1958 |
| A NTONIO ADGER. | Les Laurentides | $\begin{array}{ll}\text { Aprit. } & \text { 30, } \\ \text { Septis9 }\end{array}$ |
| Oscar Gtibert. | Bedford. | Mar. $\quad 30,1960$ |
| Jean Raymono. | Rigaud.. | Apr. 27, 1960 |
| George C. Marler (Leader) | Inkerman. | Oct. 8, 1960 |
| Arthor Duprin.. | Montarville.. | Aug. 21, 1963 |
| Gioneig Bertrand. | Ls Durantay | Aug.  <br> Nov. 12,1964 <br> 1964  |

## Subsection 6.-Ontario

The Government of Ontario consists of a Lieutenant-Governor, an Executive Council and a House of Assembly. Lieutenant-Governors from Confederation (1867) to 1959 are cited in the 1960 Year Book, p. 112; since that date the position has been held by the Hon. Justice John Keiller Mackay, appointed effective Dec. 30, 1957, followed by the Hon. William Earl Rowe, appointed effective Mar. 1, 1963.

The House of Assembly, the single-chamber Legislature of the province, is composed of 108 members elected for a statutory term of five years. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 112; the Hon. John Parmenter Robarts became Premier on Nov. 8, 1961 upon the resignation of the Hon. Leslie M. Frost, Premier from May $4,1949$.

Besides the regular departments of government, the Niagara Parks Commission, the Ontario Municipal Board, The Hydro-Electric Power Commission of Ontario, the OntarioSt. Lawrence Development Commission, the Ontario Northland Transportation Commission, the Liquor Control Board, the Liquor Licence Board, the Hospital Services Commission and The Water Resources Commission have been created.

Under the provisions of the Legislative Assembly Act (RSO 1960, c. 208 as amended) each member of the Assembly is paid an annual indemnity of $\$ 8,000$ and an allowance for expenses at the rate of $\$ 3,000$ for every member of the Assembly representing an electoral district within the Municipality of Metropolitan Toronto and $\$ 4,000$ for every member representing any other electoral district. In addition, the Speaker receives a special indemnity at the annual rate of $\$ 3,000$ and an expense allowance of $\$ 2,000$; the Chairman of the Committee of the Whole a special indemnity at the annual rate of $\$ 2,000$; and the Leader of the Opposition a salary of $\$ 12,000$ per annum in addition to his indemnity as a member. Each member of the Cabinet having charge of a department receives the ordinary indemnity as a member of the Legislature in addition to his salary as a Minister of the Crown. The salary provided in the Executive Council Act for the Premier is $\$ 16,000$ and for a Cabinet Minister having charge of a department $\$ 12,000$. By the 1956 amendment, every Minister of the Crown in charge of a department, the Minister of the Crown who is a member of The Hydro-Electric Power Commission of Ontario, and the Leader of the Opposition receives a representation allowance of $\$ 2,000$ per annum. Each Minister without Portfolio, other than the Minister who is a member of The Hydro-Electric Power Commission, receives $\$ 2,500$ salary and $\$ 1,000$ representation allowance per annum.

## 24.-Legislatures of Ontario, 1945-66, as at June 30, 1966

Note.-Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 79; for 1924-34 in the 1938 edition, p. 114; and tor 1935-45 in the 1963-64 edition, p. 87 .

| Date of Election | Legislature | Number of Sessions | Date of Firat Opening | Date of Dissolution |
| :---: | :---: | :---: | :---: | :---: |
| June 4, 1945 | 22nd. | 4 | July 16, 1945 | Apr. 27, 1948 |
| June 7. 1948 | 23 rd. | 4 | Feb. 10, 1949 | Oct. 6, 1951 |
| Nov. 22, 1951 | 24th. | 5 | Feb. 21, 1952 | May 2, 1955 |
|  | 25th. | 4 | Sept. 8, 1955 | May 4, 1959 |
| Sept. 25, 1963 | 27th | 1 | $\begin{array}{ll}\text { Jast. } & 26,1980 \\ \text { Oct. } & 29,1963\end{array}$ | Ang. 18, 1963 |

1 Life of Legislature not expired at June 30, 1966.

## 25.--Seventeenth Ministry of Ontario, as at June 30, 1966

(Party atanding at latest General Election, Sept. 25, 1963: 77 Progressive Conservative, 24 Liberal and 7 New Democratic Party.)
Nors.-Ministers are shown at date of original appointment as a Minister and at date of appointment to present portiflio, despite the formation of a new Ministry consequent upon the appointment of a new Premier.

| Office | Name | Date of First Appointment | Date of Present Appointiment |
| :---: | :---: | :---: | :---: |
| Premier and President of the Counc | Hod. John Parmenter Robarts. | Dec. 22, 1958 | Nov. 8, 1961 |
| Minister of Lands and Forests. | Hon. Archibald Kelso Robrrys. | Aug. 17, 1955 | Oct. 25, 1962 |
| Minister of Public Welfare | Hon. Louts Pierre Cecte. | Sept. 17, 1948 | Aug. 17, 1955 |
| Provincial Treasurer | Hon. James Noble Allan | Jan. 5, 1955 | Apr. 28,1958 |
| Minister of Public W | Hon. Thomas Ray Connlle..... | Nov. 1, 1950 | Dec. 22, 1958 |
| Minister of Health. | Hon. Matthew Bulloch Dymond..................... |  | Dec. 22, 1958 |
| Minister of Mumicips Affairs | Hon. Josep Whnerid Spooner. . . | July 18, 1957 | Oct. 25, 1962 |
| Provincial Secretary and Minister of Citizenship. | Hon. John Yaremko............. | Apr. 28, 1958 |  |
| Minister of Mines. | Hon. George Calvin Wardrope. | Dec. 22, 1858 | Nov. 8, 1961 |
| Minister of Labour. | Hon. Henry Leslim Rowntree.. | Nov. 21, 1960 | Oct. 25, 1962 |
| Minister of Reform Instit | Hon. Allan Grossman........... | Nov. 21, 1960 | Aug. 14, 1963 |
| Minister of Arriculture and | Hon. William A tcheson Stewart | Nov. 21, 1960 | Nov. 8, 1961 |
| Minister of Highways. | Hon. Cearles Steel MacNaughton. | Nov. 8, 1961 |  |
| Minister of Transport.......... | Hon. Imwin Hasketr, ........... | Nov. 8, 1961 | Aug. 14, 1963 |
| Minister of Tourism and Information........ | Hon. Janes Alexanoer Charles AUld. |  |  |
| Minister of Eduestion. | Hon. Wriuk Grenvile Divis. | Oct. 25, 1962 | Oct. 25 + 1962 |
| Minister of Energy and Resources Management. | Hon. Join Richard Sinonett... | Oct. 25, 1962 |  |
| Minister of Economics and Develop | Hon. Stanley John Randali.... | Nov. 8, 1963 | Nov. 8, 1963 |
| Attorney General | Hod. Arthur Allison Wishart | Mar. 26, 1964 | Mar. 26, 1964 |
| Minister without Portiolio | Hod. Grorge Elits Gomme. | Jan. 12, 1965 | Jatr. 12, 1965 |

## Subsection 7.-Manitoba

In addition to a Lieutenant-Governor, Manitoba has an Executive Council at present composed of 14 members and a Legislative Assembly of 57 members elected for a statutory term of five years. Lieutenant-Governors from Confederation (1870) to 1959 are cited in the 1960 Year Book, p. 113; since that date, the position has been held by the Hon. Errick F. Willis, sworn in on Jan. 15, 1960, followed by the Hon. Richard S. Bowles, appointed July 2, 1965. Premiers since Confederation are listed in the 1960 Year Book, p. 114.

The Premier of the province is paid a salary of $\$ 18,000$ per annum and each of the other members of the Cabinet $\$ 15,000$. Members of the Legislature are each paid a sessional indemnity of $\$ 3,200$ and a tax-free expense allowance of $\$ 1,600$ plus an allowance of $\$ 10$ a day for a period of 60 days continuous sitting including Saturdays and Sundays for members outside Metro Winnipeg who have to take board and lodging in Winnipeg during legislative sessions, and Cabinet Ministers in charge of a department each receive
an additional "representation allowance" of $\$ 3,000$. The Leader of the Opposition is paid an additional amount of $\$ 6,000$ and the Speaker of the Legislature receives $\$ 9,600$ which is an amount equal to double the indemnity and expense allowance of an individual member.

## 26.-Lekislatures of Manitoba, 1945-cc, as at Oct. 1, 1966

Nore.-Legislatures from Confederation to 1923 are given in the 1824 Year Book. p. 80; for 1924-86 in the 1938 edition, p. 115; and for 1937-45 in the 1963-64 edition, p. 88.

| Date of Election | Legislature | Number of Segsions | Date of First Opening | Date of Dissolution |
| :---: | :---: | :---: | :---: | :---: |
| Oct. 15, 1945 | 22nd. | 4 | Feb. 19, 1948 | Sept. 29, 1949 |
| Nov. 10, 1949 | 23rd | 7 | Feb. 14, 1959 | Apr. 23,1953 |
| June 8, 1953 | 24th | 5 | Feb. 2, 1954 | Apr. 30, 1958 |
| June 16, 1958 | 25 th | ${ }_{2}^{2}$ | Oct. 23,1858 | Mar. 31. 1939 |
| May 14, Dec. 14, 1959 | 27th | 5 | June 29, ${ }_{\text {Feb. }}{ }^{\text {as, }} 1969$ | Nov. 8, May 18, 1966 1960 |
| June 23, 1966 | 28th | 1 | 2, | 18, |

${ }^{1}$ Not yet in sesaion by Oct. 1, 1966.

## 27.-Fifteenth Ministry of Manitoba, as at Oct. 1, $196 \%$

(Party standing at latest General Election, Jane 23, 1966: 31 Progressive Conservative, 14 Liberal, 11 New Democratic Party and 1 Social Credit.)

| Office | Name | Date of First Appointment | Date of <br> Present Appointment |
| :---: | :---: | :---: | :---: |
| Premier, President of the Council, Minister of |  |  |  |
| Dominion-Provincial Relations and Minister charged with the administration of the | H | June 30, 1958 | June 30, 1958 |
| Provincial Treasurer, Minister eharged with | Hon. Dufrerin Roblin. | June 30, |  |
| the administration of the Insurance Act and Minister of Mines and Natural Resources. | Hon. Edward Gurney Vadx |  |  |
| Provincial Secretary, Minister of Public |  |  |  |
| Works, Minister of Public Utilities and |  |  |  |
| Minister in all other offices to which, and under all statutes under which, he has been |  |  |  |
| appointed or designated as Minister........ | Hon. Stewart E. McLean. | 30, 1958 | July 22, 1960 |
| Attorney-General and Minister of Tourism and Recreation. | Hon. Sterling Rufus Lyon. | June 30, 1958 | July 22, ${ }^{\text {d }}$ (1966 |
| Minister of Educatio | Hon. Glonge dohnson... | June 30, 1958 | Dec. 9. ${ }^{1983}$ |
| Minister of Wetfare. | Hon. John B. Carroll. | Јкле 30, 1958 | Feb. 27, 1963 |
| Minister of Health | Hon+ Charles H. Witne | Aug. ${ }^{7} .1959$ | Dec. ${ }^{\text {9, }}$, 1063 |
| Minister of Highw | Hon. Walter Witr | Oct. 31, ${ }^{\text {Oeb. }} \mathbf{2 7} 1963$ | Feb. 27. 1963 |
| Minister of Labour.... | Hon. Robert G. Smel | Feb. 27, 1963 | July 22, 1966 |
| Miniater without Portfol | Hon. Maitland Bernard Stein коPF. | June 12, 1963 | July 22, 1968 |
| Minister of Urban Development and Municipal Affairs. | Fon. Thelma Forbes | July 22, 1966 | July 22, 1966 |
| Minister of Industry and Commeree | Hon. Sidney Spivak. | July 22. 1966 | July 22, ${ }_{1966}$ |
| Minister of Agriculture and Conservation.... | Hon. Harry Enns | July 22, 1866 | July 22, 1966 |

## Subsection 8.-Saskatchewan

The Government of Saskatchewan consists of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. Lieutenant-Governors from Confederation (1905) to 1959 are cited in the 1960 Year Book, p. 115; since that date the office has been held by the Hon. F. L. Bastedo, commissioned to office Jan. 27, 1958, followed by the Hon. Robert L. Hanbidge, commissioned to office Mar. 1, 1963.

The statutory number of members of the Legislative Assembly is 59 , elected for a maximum term of five years. Premiers from Confederation to 1959 are listed in the 1960 Year Book, p. 1I5; the Hon. W S. Lloyd became Premier in 1961 and the Hon. W. R. Thatcher in 1964.

The Premier receives $\$ 13,000$ and each Cabinet Minister $\$ 10,000$ annually in addition to a sessional indemnity. The Leader of the Opposition receives $\$ 10,000$ plus an office allowance of $\$ 12,000$ per annum, the Speaker $\$ 3,000$ and the Deputy Speaker $\$ 2,000$. The sessional indemnity of a member of the Legislature is $\$ 4,000$ together with an expense allowance of $\$ 2,000$. Each of the members for the three northernmost constituencies of Cumberland, Athabasca and Meadow Lake receives a $\$ 4,335$ sessional indemnity and a $\$ 2,165$ expense allowance.

## 28.-Legislatures of Saskatehewan, 1945-66, as at June 30, 1966

Nore.-Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 81; for 1924-34 in the 1938 edition, D. 18; and for 1935-44 in the 1963-64 edition, p. 89.

| Date of Election | Legislature | Number of Sessions | Date of First Opening | Date of Dissolution |
| :---: | :---: | :---: | :---: | :---: |
| Jane 15, 1844 | 10th. | 5 | Oct. 19, 1944 | May 19, 1948 |
| June 24, 1948 | 11th. | 5 | Feb. 10, 1949 | May 7, 1952 |
| June 11, 1958 | 12th | 4 | Feb. 12, 1953 | Apr. 25, 1956 |
| Jume 23, <br> Junet 8956 <br> 1960  | 13 th | 6 | Feb. 14, 1957 | May 4, 1960 |
| Apr. 22, 1984 | 15th | 1 | Fet. <br> Feb. <br> 4, | Mar. 18, 1904 |

${ }^{1}$ Life of Legislature not expired at June 30, 1966.

## 29.-Tenth Ministry of Saskatchewan, as at June 30, 1988

(Party standing at latest General Election, Apr. 22, 1964: 33 Liberal, 25 Co-operative Commonwealth Federation and 1 Progressive Conservative.)

| Office | Name | Date of Appointment |
| :---: | :---: | :---: |
| Premier, Preaident of the Executive Cooncil and Provincial Treasurer. |  |  |
|  | Hon. W. R. Thatcelr. | May 22, 1964 |
| Minister of Agriculture | Hon, D. T. McFarlane | July 5, 1965 |
| Minister of Public Health | Hon. D. G. Stevart. | May 22, 1964 |
| Attorney General and Provincial Secretar | Hon. D. V. Heald. | May 22, 1964 |
| Minister of Mineral Resources... ${ }_{\text {A }}$ | Hon. A. C. Cakeron Hon. G. B. Grant. | May 22. 1864 |
| Minigter of Education.................... | Hon. G. J. Trapp. | May 22.1964 |
| Minister of Highways and Transportation and Minister of Telephones. | Hon. G. B. Grant | May 22, 1964 |
| Minister of Welfare. | Hon. D. Boldtr. | May 22, 1964 |
| Minister of Municipal Affairs......................... | Hon. J. C. McIsan | July 5, 1965 |
| Minister of Labour and Minister of Co-operation and Co-operative Development. | Hon. L. P. Codmbre | May 22, 1964 |
| Minister of Public Works.. | Hon. J. W. Gardiner | May 22, 1964 |
| Minister of Natural Resources | Hon. J. M. Collenaer | May 22, 1964 |

## Subsection 9.-Alberta

The Government of Alberta is composed of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. Lieutenant-Governors from Confederation (1905) to 1959 are listed in the 1960 Year Book, p. 116; since that date the office has been held by the Hon. J. Percy Page, commissioned to office Dec. 19, 1959, followed by the Hon. J. W Grant MacEwan, commissioned in January 1966.

There are 63 members in the Legislative Assembly, elected for a maximum period of five years. Premiers since Confederation are listed in the 1960 Year Book, p. 117; the present Premier assumed office in 1943.

Each member of the Legislative Assembly (except the Speaker, the Deputy Speaker and the Leader of the Opposition) receives a sessional indemnity of $\$ 3,600$ plus $\$ 1,800$
expense allowance plus $\$ 15$ for each day during the session when the member is necessarily absent from his ordinary place of residence, both tax free. The Speaker's sessional indemnity is $\$ 6,000$ plus $\$ 3,000$ expense allowance, the Deputy Speaker's sessional indemnity is $\$ 4,800$ plus $\$ 2,400$ expense allowance, and the Leader of the Opposition's sessional indemnity is $\$ 7,600$ plus $\$ 3,800$ expense allowance. Each also receives $\$ 15$ for each day during the session when he is necessarily absent from his ordinary place of residence. The Premier, in addition to the sessional indemnity, receives $\$ 16,000$ and each of the other Ministers receives $\$ 12,500$.

## 30.-Legislatures of Alberta, 1945-66, as at June 30, 1966

Nots.-Lecislatures from Confederation to 1923 are given in the 1924 Year Book, p. 82; for 1924-34 in the 1938 edition, p. 117; and for 1935-44 in the 1983-64 edition, p. 90.

| Date of Election | Legislature | Number of Sessiona | Date of Firgt Opening | Date of Dissolution |
| :---: | :---: | :---: | :---: | :---: |
| Aug. 8, 1944 | 10th | 5 | Feb. 22, 1945 | July 16, 1948 |
| Aug. 17, 1948 | 11th | 5 | Feb. 17, 1949 | June 28, 1952 |
| Ang. 5, 1952 | 12th | 3 | Feb. 19, 1953 | May 12, 1955 |
| June 29, 1955 | 13th | 5 | Aug. 17, 1955 | May 19, 1959 |
| June 18, June 17.1959 1893 | 14tb | 5 | Feb. 11, 1960 | May 9, 1963 |
| June 17. 1963 | 15tb | 1 | Feb. 13, 1964 | 1 |

${ }^{1}$ Life of Legialature not expired at June 30, 1980.

## 31.-E1ghth Ministry of Alberta, as at June 30, 1966

(Party standing at latest General Election, June 17, 1963: 00 Social Credit, 2 Liberal and 1 Coalition,)

| Offies | Name | Date of First Appointment | Date of Present Appointment |
| :---: | :---: | :---: | :---: |
| Premier, President of Council and Attorney Geberal. | Hon. Ernest C. Manning | Sept. 3. 1935 | May 31, 1943 |
| Minister of Municipal Affairs | Hon, Alpred J. Hoone | Apr. 20, 1945 | Aug. 2, 1955 |
| Minister of Highways........ | Hon. Gordon E. Tayıor. | Dec. 27, 1950 | May 1, 1951 |
| Minister of Education | Hon. Randolpe H. MoKinnon.. | July 31. 1964 | July 31, 1964 |
| Minister of Public Welfar | Hon. Leonard C. Halmrast. | Jan. 3, 1953 | Oet. 15, 1062 |
| Minister of Lands and Forest | Hon. Henry A. Ruste. | Feb. 16. 1965 | Feb, 18, 1965 |
| Provincial Treasurer | Hon. Anders O. Anlborg | Sept. 9, 1952 | July 29, 1964 |
| Minister of Public Works. | Hon. Fred C. Colborne. | Aug. 2, 1955 | Nov. 30, 1962 |
| Minister of Industry and Development and Minister of Mines and Minerals. | Hob. A. Rogsell Patrick, | Aug. 2, 1955 | $\begin{cases}\text { Sept. } & 1, \\ \text { Oct. } & 1959 \\ 15062\end{cases}$ |
| Minister of Labour and Minister of Telephones. | Hon. Raymond Relerson | Aug. 2. 1955 | Sept. 22, 1959 |
| Minister of Health | Hon. J. Donovan Ross. | Sept. 18, 1957 | Sept. 18, 1957 |
| Minister of Agricultur | Hod. Harry E. Strom. | Oct. 15. 1962 | Oct. 15, 1982 |
| Provincial Secretary | Hon. Ambrose Holowace | Oct, 15, 1962 | Oct. 15, 1962 |
| Minister without Port | Hom. IRA Mclajohlin | Nov. ${ }^{30,1962}$ Nov. 30, 1962 | Nov. Nov. 30,1962 |

## Subsection 10.-British Columbia

The Government of British Columbia has a Lieutenant-Governor, an Executive Council and a Legislative Assembly. Maj.-Gen, the Hon. George Randolph Pearkes, LieutenantGovernor at Apr. 30, 1965, was commissioned to office Oct. 12, 1960. Lieutenant-Governors from Confederation (1871) to 1959 are cited in the 1960 Year Book, p. 118.

The Legislative Assembly, elected for a statutory term of five years, has 55 members. Premiers from Confederation to 1959 are cited in the 1960 Year Book, p. 118; the present Premier assumed office in 1952.

Each member of the Executive Council and the Legislative Assembly receives a sessional allowance of $\$ 5,000$ and $\$ 1,500$ for expenses. There is also paid to each member a living
allowance of $\$ 1,000$ and each member receives an allowance of 25 cents per mile of the distance between his place of residence and the city of Victoria, reckoning such distance, going and coming, according to the nearest mail route. Each member also receives an allowance of $\$ 500$ for telegraph and telephone expenses. In addition, the Premier receives a salary of $\$ 20,000$ and each member of the Executive Council a salary of $\$ 17,500$. The Leader of the Opposition receives a special allowance of $\$ 7,500$ for expenses, the Speaker receives a special allowance of $\$ 7,500$, and the Deputy Speaker a special allowance of \$2,500.

## 32.-Legislatures of British Columbla, 1945-66, as at Oct. 21, 1966

Nonr.-Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 83; for 1924-37 in the 1938 edition, p. 118; and for 1938-45 in the 1963-64 edition, p. 91 .

| Date of Election | Legislature | Number of Sessions | Date of First Opening | Date of Dissolution |
| :---: | :---: | :---: | :---: | :---: |
| Oct. 25, 1945 | 21st | 5 | Feb. 21, 1946 | Apr. 16, 1949 |
| June 15, 1949 | 22 nd | 4 | Feb. 14, 1950 | Apr. 10, 1952 |
| June 12, 1952 | 23 rd | 1 | Feb. 3, 1953 | Mar. 27, 1953 |
| June 9, 1953 | 24th | 4 | Sept. 15, 1953 | Aug. 13, 1956 |
| Sept. 19, 1956 | 25 th | 4 | Feb. 7, 1957 | Aug. 3, 1960 |
| Sept. 12, 1960 | 26tb | 4 | Jan. 26, 1961 | Aug. 21, 1968 |
| Sept. 30, 1963 | 28th | ${ }_{1}$ | Jan. 23, 1964 | Aug. 5, 1986 |

I Not yet in seasion by Oct. 21, 1966.
33.-Twenty-eighth Ministry of British Columbia, as at Oct. 21, 1906
(Party atanding at latest General Election, Sept. 12, 1966: 33 Social Credit, 16 New Democratic Party and 6 Liberal.)

| Office | Name | Date of First Appointment | Date of Present Appointment |
| :---: | :---: | :---: | :---: |
| Premier, President of the Council and Minister of Fidance. | Hon. Whlam Andrew Cecu Bennett. | Aug. 1, 1952 | $\left\{\begin{array}{l}\text { Aug. } \\ \text { Aug. } \\ \text { 1, } \\ \text { 1, } \\ \text {, } \\ \text { 1952 }\end{array}\right.$ |
| Provincial Secretary and Minister of Social |  |  | Feb. 15, 1954 |
|  | Hon. Wealey Drewett Black... | Aug. 1, 1952 | $\left\{\begin{array}{lll} \text { Aug. } & 1, & 1952 \\ \text { Mas. } & 20, & 1959 \end{array}\right.$ |
| Attorney-General and Minister of Commercial Transport. | Hod. Robert William Bonner.. | Aug. 1, 1952 | $\begin{cases}\text { Aug. } & 1, \\ \text { Mar. } 20, & 1052 \\ \hline 1064\end{cases}$ |
| Minister of Lands, Forests, and Water Resources. | Hon. Ray Gilus Fimibion ...... | Apr. 14, 1954 |  |
| Minister of Aqricultur | Hon. Francis Xavier Richier. . | Nov. 88, 1960 | Nov. 28, 1960 |
| Minister of Mines and Petroleum Resaurces.. | Hon. Donald Lislie Brothers.. | Mar. 20, 1964 | $\begin{array}{ll}\text { Mar, } 20, & 1984 \\ \text { Mar. } & 18,1955\end{array}$ |
| Minister of Highways. <br> Minister of Labour and Minister of Educa- | Hon. Pbirif Arthur Gaglardi.. | $\begin{array}{ll}\text { Aug. 1, } & 1952 \\ \text { Sept. } & 27,1956\end{array}$ | $\begin{array}{lll}\text { Mar. } & \text { 15, } & 1955 \\ \text { Noy. 28, } & 1960\end{array}$ |
| Minister of Industria Development, Trade. and Commerce. | Hon. Ralph Rapmond Loppmare | Mar. 20, 1964 | Mar. 20, 1964 |
| Miniater of Municipal Affairs.......... | Hon. Daniel Robert Joyn Camprell. | Mar. 20, 1964 | Mar. 20, 1964 |
| Minister of Health Services and Hospital Insurance. | Hon. Eric Cearles Fitzgerald Martin |  | Mar. 20. 1959 |
| Minister of Public Worka....... | Hon. Woliam Nerlande Chant. | Mar. 15, 1955 | Mar. 15, 1958 |
| Minister of Recreation and Conservation | Hon. Whliam Kenneth Kiernan | Aug. 1, 1952 | Mar. 20, 1964 |

## Subsection 11.-Yukon Territory and Northwest Territories

Yukon Territory.-The Yukon was created a separate Territory on June 13, 1898 (see p. 82). Provision is made for a local government administered by a Commissioner appointed by the Governor in Council. There is an elected Council of seven members (1961) which usually meets twice a year in Whitehorse, the seat of local government; the Council elects its own speaker. The Commissioner administers the government under
instructions from the Governor in Council or the Minister of Indian Affairs and Northern Development. The Commissioner in Council has power to make ordinances dealing with the imposition of local taxes, sale of liquor, preservation of game, establishment of territorial offices, maintenance of municipal institutions, issue of licences, incorporation of companies, solemnization of marriage, property and civil rights, and generally all matters of a local nature in the Territory. The Commissioner and Council in office on June 30, 1966 were elected in 1964 for a three-year term.

## GOVERNMENT OF THE YUKON TERRITORY

(as at June 30, 1866)

| Commlssioner | G. R. Cameron |
| :---: | :---: |
| Members of the Council- |  |
| Carmacks-Kluane. | Robert D. Mackinnon |
| Dawson. | Grorge O. Shaw (Speaker) |
| Mayo. | Frank G. Soutiam |
| Watson Lake. | Donald G. Taylor |
| Whiteborse East. | Herbert E. Boyd |
| Whitehorse North | John Kennett Thompeon |
| Whitehorse South. | J. Watt |
| Officers of the Councll- |  |
| Territorial Secretary and Clers of the Council. | H. J. Taylor |
| Territorial Treasurer. | K. McKenar |
| Legal Adviser | C. P. Hughes |

The Northern Administration Branch, Department of Indian Affairs and Northern Development, has the responsibility for the general administration of the natural resources of the Yukon Territory, except game. The Department maintains lands and mining offices at four points in the Territory. Other departments and agencies of the Federal Government maintaining offices in Yukon Territory include: the Department of Justice, the Royal Canadian Mounted Police, the Department of National Defence, the Department of Energy, Mines and Resources, the Department of National Revenue, the Department of Transport, the Post Office Department, the Department of Agriculture, the Department of Public Works, the Department of Fisheries, and the (now) Department of Manpower and Immigration.*

Northwest Territories.-As reconstituted on Sept. 1, 1905, the Northwest Territories comprise: (1) all that part of Canada north of the 60th parallel of north latitude, except the portions thereof within the Yukon Territory and the Provinces of Quebec and Newfoundland; and (2) the islands in Hudson Bay, James Bay and Ungava Bay, except those islands within the Provinces of Manitoba, Ontario and Quebec.

The Northwest Territories Act (RSC 1952, c. 331) provides for the appointment of a Commissioner to administer the government of the Territories under instructions given from time to time by the Governor in Council or the Minister of Indian Affairs and Northern Development. The Northwest Territories Act, as amended, also provides for a Council of nine members, four of whom are elected in the Mackenzie District and five of whom are appointed by the Governor in Council. The Commissioner in Council has legislative powers respecting such matters as direct taxation, establishment and tenure of territorial offices, municipal institutions, controverted elections, licences, incorporation of companies, property and civil rights, administration of justice, game, education, hospitals and generally all matters of a local or private nature. The Council meets once each year in the Terri-

[^42]tories and at least once each year in Ottawa which is the seat of government. The resources, except game, remain under the control of the Federal Government. The administration of legislation passed by the Commissioner in Council and the maintenance of resources under federal legislation are conducted by the Northern Administration Branch of the Department of Indian Affairs and Northern Development. Administrative offices are located at a number of centres in the Territories including Fort Smith, Yellowknife, Hay River, Inuvik and Frobisher Bay,

## COUNCIL OF THE NORTHWEST TERRITORIES

(as at June 30, 1966)


In May 1965, the Minister of Indian Affairs and Northern Development announced the establishment of an Advisory Commission on the Development of Government in the Northwest Territories to study the practical problems involved, seek the views of northern residents and recommend to the Federal Government the steps required to give a greater measure of self-government to the Northwest Territories. The Commission is an impartial, fact-finding group, its three members being drawn from fields outside Government. The Commission was to present its report in the autumn of 1966.

## Section 3.-Municipal Government*

The British North America Act of 1867 placed municipal government in Canada under the control of the provincial legislatures. The powers and responsibilities of municipalities are those delegated to them by statutes passed by their respective provincia! legislatures. Some of these statutes apply to all municipalities within a province, some to a certain type or group and many to one municipality only. The types of municipal organization in existence and the nature of the municipal services provided vary greatly from region to region and are adjusted from time to time to meet changing needs and conditions.

In addition to the well-known types of organized municipalities-cities, towns, villages, counties, etc.-there are various other forms of local government organization. Certain municipal government bodies encompass a number of municipalities or parts of municipalities. For example, special district authorities (greater water and sewerage and drainage districts, irrigation districts and health units) may provide services to a number of municipalities. Similarly, metropolitan goveroment authorities provide certain services to a number of area municipalities. In some provinces, the more sparsely settled areas do not

[^43]have organized municipalities. Instead, they are divided into local improvement districts, local government districts or special areas in which the local government services are administered by offcials appointed by the provincial Departments of Municipal Affairs.

The major local revenue source available to municipalities is the taxation of real property. It is supplemented in varying degrees by taxation of personal property, business, persons (poll taxes) and tenants. In two provinces municipalities may levy an amusement tax, in three they may impose sales taxes on specific commodities. Miscellaneous general revenue is derived from licences, permits, rents, concessions, franchises and fines. A great many municipalities operate utilities for the provision of water and, in many instances, electricity, gas, transportation, telephone and other services. These sometimes provide surplus funds that may become available to help pay for other municipal services. On the other hand, expenditures of municipalities often include provision for the deficits of their utilities and enterprises.

In differing degrees and with varying provincial assistance, municipalities are responsible for the following services: protection to persons and property through police and fire forces, courts and local gaols, and inspection services; roads and streets; sanitation; certain health and welfare services; and some recreation and other community services. In most provinces, municipalities are responsible for levying and collecting local education taxes on behalf of the local schools, and often for borrowing capital funds for school construction. Local administrative responsibility for education lies with boards of trustees separate from the councils that govern municipalities (except Alberta; see p. 122).

All provinces give some form of financial assistance to their municipalities. This may be in the form of monetary grants, such as unconditional subsidies which may be spent as the municipalities see fit, or grants-in-aid of specific services that are the municipal responsibility. The provinces may also make loans to municipalities for capital purposes or guarantee the bonds issued by the municipalities. Other forms of indirect assistance are the resumption by the provincial governments of responsibilities formerly delegated to the municipalities and the extension of municipal taxing privileges into what were formerly considered to be provincial revenue fields. The provinces also provide various technical and consultative services to their municipalities.

The following paragraphs describe municipal organization in each province and in the Territories as at Jan. 1, 1966. In Table 34 (which gives the number of each type of mumicipality in each province) all fully incorporated cities, towns and villages are regarded as 'urban' municipalities.

Newfoundland.-The Province of Newfoundland has two cities-St. John's and Corner Brook. A number of the province's many settlements have been organized into 54 towns, four rural districts, eight local improvement districts and 60 local government communities. The towns, rural districts and local improvement districts operate under the Local Government Act; towns and rural districts have elected councils and local improvement districts have appointed trustees. Local government communities established under the Community Councils Act in the smaller settlements have limited powers and functions. There are no rural municipalities in the ususl sense. Only about one fifth of 1 p.c. of the total area is municipally organized. Municipalities are supervised by the Department of Municipal Affairs and Supply.

Prince Edward Island.-In this province, one city and seven towns have been incorporated under special Acts and 21 villages have been established under the Village Services Act. There is no municipal organization for the remainder of the province although it is divided into school sections which have elected school boards.

Nova Scotia.-Municipal organization in Nova Scotia covers the whole of the province. The three cities operate under special charters and special legislation. Thirtynine towns operate under the Town Incorporation Act but there are no municipalities incorporated as villages. Cities and towns are independent of counties. The rural area is divided into 18 counties which, in themselves, do not represent units of local government. However, 12 of these counties each comprise one municipality and the other six each comprise two municipalities, making a total of 24 rural municipalities. Supervision of municipalities is exercised through the Department of Municipal Affairs.

New Brunswick.-This province is divided into 15 counties which are incorporated municipalities and have direct powers of local self-government as rural municipalities, although certain of their powers often apply in both rural and urban municipalities. The six cities have special charters and the 21 towns operate under the Towns Incorporation Act. There is also one village. There are 60 local improvement districts and 10 commissions within the counties but outside the cities, towns and village; these have been incorporated for the provision of limited municipal services. The Department of Municipal Affairs exercises supervision.

Quebec.-Municipal divisions in Quebec embrace the more thickly settled areas comprising about one third of the province and the remainder is governed by the province as 'territories' The organized area is divided into 74 county municipalities which are divided again into local municipalities and designated as village, township or parish municipalities or simply as municipalities. The counties as such have no direct powers of taxation. Funds to finance the services falling within their jurisdiction are provided by the municipalities forming part thereof. Parts of some counties are not yet organized into incorporated units of local government, being in outlying areas and having little or no population. There are 316 villages and 1,102 townships and parishes. A small number of these are independent of the counties in which they are located. The Municipal Code governs local municipalities and the 62 cities and 178 towns have special Acts. The supervision and assistance of municipalities is through the Department of Municipal Affairs and the Quebec Municipal Commission. Municipal statistics are gathered by the Quebec Bureau of Statistics.

The active functions of the Montreal Metropolitan Corporation are limited because of the ability of the area municipalities to fulal their own obligations. The Corporation services borrowings contracted before Apr. 1, 1961, when the Montreal Metropolitan Boulevard became a provincial responsibility, and apportions costs incurred in the area municipalities for streets constructed on each side of the Boulevard.

Ontario.-Slightly more than one tenth of the area of Ontario is municipally organized and the remainder is governed entirely by the provincial government. The older settled section of the province is divided into 43 counties, five of which are united with others for administrative purposes. Each county, although it is an incorporated municipality, is comprised of the towns, villages and townships situated within its borders and these provide its revenue. There are 33 cities, 155 towns, 158 villages, 571 townships and 18 improvement districts in the province. Some of each are located in the northern districts which are not organized into counties. Supervisory control of municipalities is exercised by the Department of Municipal Affairs and the Ontario Municipal Board under the Municipal Act and other Acts governing aspects of municipal government.

The Municipality of Metropolitan Toronto, in existence since Jan. 1, 1954, encompasses one city, four towns, three villages and five townships. The Metropolitan Council is composed of the mayor, two senior controllers and the senior alderman of each of the nine wards of the City of Toronto, and the head of the council of each of the 12 suburban municipalities. The chairman is elected by the councillors and need not be a councillor
of an area municipality. The Council has jurisdiction over assessments, water supply, sewerage works, metropolitan road systems, transit, municipal housing developments, community planning, parks and recreation areas, the Court House, certain health and welfare services and the correlation of educational facilities in the metropolitan area. It also controls a unified metropolitan police force and a metropolitan licensing commission. Expenditures are financed by a levy apportioned among the area municipalities. All borrowing of the area municipalities for capital purposes is done by the Municipality of Metropolitan Toronto.

Manitoba.-Manitoba has nine cities, which derive their powers from special Acts and do not come under the supervision of the Department of Municipal Affairs. The Department supervises the 36 towns, 41 villages and 110 rural municipalities under the Municipal Act. There are local government districts in settled areas not within municipalities where the province has placed a resident administrator to carry out the functions of a municipal council. The unorganized areas are the direct responsibility of the provincial government.

The Metropolitan Corporation of Greater Winnipeg has been in existence since Nov. 1, 1960. Its council is separate and distinct from those of the 16 area municipalities. The councillors are elected as individuals from ten new districts, each containing approximately the same number of voters. The council has jurisdiction over planning, zoning, land development, assessments, arterial roads, water supply, sewage disposal, transit and other services. It borrows money only for its own undertakings and leaves to its area municipalities the responsibility for welfare, police, fire protection and other services. Expenditures are financed by a proportion of the business and other taxes levied on industrial or commerical property by the area municipalities and by a uniform levy on the equalized assessment of all taxable real property in the area municipalities.

Saskatchewan.-All municipalities in Saskatchewan derive their powers from general Acts that are designated with the name of the type of municipality. There are 11 cities, 123 towns, 363 villages and 294 rural municipalities. The area so organized consists of most of the southern two fifths of the province; the remajnder of this portion is administered for local purposes by the province in unincorporated local improvement districts. The northern three fifths is spargely populated and without local government, although some municipal services are provided by the province through operation of the Northern Administration District. Municipalities are supervised by the Department of Municipal Affairs.

Alberta.- The whole Province of Alberta is under some type of municipal organization. The province has an Act applying to each type of municipality and under these Acts the Department of Municipal Affairs supervises the nine cities, 93 towns, 167 villages, 21 municipal districts and 28 counties. The latter administer schools as well as municipal services. Municipal government for the 51 improvement districts and three special areas is provided by the Department of Municipal Affairs.

British Columbia.-Less than one half of 1 p.c. of the area of British Columbia is organized into municipalities. Additional small areas have sufficient population to require administration of local activities by the provincial government. There are 32 cities, ten towns, 58 villages and 36 districts; the latter are mostly rural muxicipalities although there are some districts adjacent to the principal cities of Victoria and Vancouver that are largely urban in character. It should be emphasized, however, that the application of the name 'city' is somewhat different from the commonly accepted meaning, in that several of them have populations of fewer than 3,000 and perhaps one half or more would not normally be incorporated as cities in another province. Municipalities are supervised by the Department of Municipal Affairs.

In addition to the above types of municipalities, there are unincorporated improvement districts that have been set up to provide certain municipal services such as protection, waterworks, irrigation, etc. These districts are under the supervision of the Department of Lands, Forests, and Water Resources.

Yukon and Northwest Territories.-There are two cities, Whitehorse and Dawson, and one unincorporated town, Mayo, in the Yukon Territory and two towns, Yellowknife and Hay River, in the Northwest Territories, all of which provide some municipal services to their local areas. These are not shown in Table 34.

## 34.-Municlpalities classified by their Official Designation and Statistical Classification, by Province, as at Jan. 1, 1966

| Item | Nfid. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Orfichat Disignation ${ }^{1}$ |  |  |  |  |  |  |  |  |  |  |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| Local municipalities........ | 128 | 29 | 66 | 1083 | 1,659 | ${ }^{936}$ | 197 | 791 | 318 | 136 | 4.363 |
| Metropobitan corporations. Cities. | - | $f$ | $s$ | $\hat{6}$ | ${ }_{68}{ }^{14}$ | ${ }^{15}$ | ${ }_{9}^{6}$ | 11 | 9 | 82 | ${ }_{168}^{5}$ |
| Towns................... | $66^{7}$ | 7 | \%9 | 21 | 178 | 155 | 56 | 128 | 98 | 10 | 728 |
| Villages | $60^{8}$ | 21 |  | 1 | 916 | 158 | 41 | \$68 | 167 | 58 | 1.185 |
| Rural | $\ldots$ | $\ldots$ | 24 | $75^{\text {a }}$ | 1,108 | 58810 | 11011 | 2942 | 4912 | $36{ }^{14}$ | 2,879 |
| Quebec and Ontario counties | $\ldots$ | +. | $\cdots$ | $\cdots$ | 74 | 38 | + $\cdot$ | $\ldots$ | +.. | $\ldots$ | 112 |
| Totals, Incorporated Municlpalities. | 128 | 25 | 66 | 103 | 1,738 | 974 | 197 | 391 | 318 | 136 | 4,475 |

Statistical Classification ${ }^{2}$

|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Municipalitiea in Metropolitan Areas ${ }^{15}$. | 2 |  | 3 | 5 | 109 | 71 | 17 |  | 7 | 20 | 234 |
| Urban..................... | ${ }_{8}$ | $\ldots$ | 2 | 5 | 190 | 48 | 10 | $\because$ | 3 | 8 | 161 |
| Rural. | .. |  | 1 | 2 | 19 | 28 | 7 | $\ldots$ | 4 | 18 | 73 |
| Other urban municipalities. . | 126 | 29 | 40 | 25 | 467 | 304 | 77 | 497 | 266 | 92 | 1,923 |
| Other rural municipalities. . | $\ldots$ | $\ldots$ | 23 | 73 | 1,083 | 561 | 103 | 294 | 45 | 24 | 2,206 |
| Semi-urbon. | $\ldots$ | $\ldots$ |  |  |  | $57^{16}$ |  |  |  |  |  |
| Other. | $\cdots$ | $\ldots$ | 28 | 75 | 1,085 | 504 | 108 | 294 | 45 | 24 | 2.149 |
| Quebec and Ontario counties | $\cdots$ | $\cdots$ | $\ldots$ | $\ldots$ | 74 | 38 | $\ldots$ | $\ldots$ | $\ldots$ | $\ldots$ | 112 |
| Totals, Incorporated Municipalties. | 128 | 20 | 66 | 103 | 1,733 | 974 | 197 | 791 | 318 | 136 | 4,475 |

[^44]
## Section 4.-Federal and Provincial Royal Commissions

Federal Royal Commissions Established.-Royal Commissions established from May 1, 1965 to June 30, 1966 under Part I of the Federal Inquiries Act are given here in continuation of those previously reported in the Year Books beginning with the 1940 edition, pp. 1108-1110. Any Commission established between June 30, 1966 and the date of going to press will be found in the Register of Official Appointments, Chapter XXVII, Part III.

Nature of Commission
To inquire into the marketing problems of the Ireshwater fish industry in the Provinces of Ontario, Manitoba, Saskatchewan and Alberta and in the Northwest Territories.
To inquire into the increases in rates of pay for civil servants in Group D announced by the Government on July 16, 1965.
To inquire into working conditions in the Post Office Department.
To inquire into the dealings of the Hon. Mr. Justice Léo A. Landreville with Northern Ontario Natural Gas Limited.
To inquire into the complaints made by George Victor Spencer.
To inquire into matters relating to one Gerda Munsinger.

| Chief Commissioner | $\begin{gathered} \text { Dete } \\ \text { Established } \end{gathered}$ |
| :---: | :---: |
| Grorge H. Mcivor. | July 9, 1965 |
| Judge Jacob Carrole Anderson.. | July 23. 1965 |
| Hon. Mr. Justice André Montpetit | Sept. 1, 1965 |
| Hon. I. C. Rand., | Jan. 19, 1966 |
| Hon. Mr. Justice D. C. Wells..... | Mar. 7, 1906 |
| Hon. Mr. Juatice W. F. Sprnce.... | Mar. 14, 1966 |

Bate July 9, 1965

July 23. 1965

Hon. Mr. Justice Andre Montpetit Sept. 1, 1965
Hon. I. C. Rand........................ Jan. 19, 1966

Hon. Mr. Justice D. C. Wells..... Mar. 7, 19066
Hon. Mr. Juatice W. F. Spgnce.... Mar. 14, 1966

Reports of Federal Royal Commissions.-Reports of Federal Royal Commissions issued during the period May 1, 1965 to June 30, 1966 were as follows:-

Report of Commission of Inquiry into sllegations sbout improper inducements and pressures on counsel acting for the extradition of Lucien Rivard, e9tablished Nov. 25, 1964. Ottawa, June 1965. 149 p. \$1. (Cat. No. Z1-1964/2).

Report of Commission of Inquiry into circumstances surrounding the erash of Douglas DC-8F Aircraft CF-TJN at Ste. Thérèse de Blainville, Que., on Nov. 29. 1963, established Oct. 8, 1964. Ottawa, 1965. 41 p. 50\%. (Cat. No. Z1-1964/3).

Interim Report of Commission of Inquiry into increases in rates of pay for civil servanta in Group D، established July 23, 1965. Ottawa, August 1965. 15 p. 15i. (Cat. No. 21-1965/1-1).

Report of Commission of Inquiry as to the future of the Air Canada overbaul base at Winnipeg International Airport and related matters, established June 11, 1964. Ottawa, 1966.175 p. Free. (Cat. No. Z1-1964/4).

Provincial Royal Commissions.-The following provincial Royal Commissions were established during the period May 1, 1965 to June 30, 1966:-

> Province and Nature of Commission

## Newnoundland

*To inquire into economic prospects for New-
foundland.
To inquire into legislation zoverning the practice
of accounting and auditing throughout the
province.

To inquire into minimum wage rates.
To inquire into the tax structure of the City of St. Jobn's.
To inquire into food and drug costs
To inquire into the pension plans applying to employeea of the Government of Newfoundland and Labrador and the College of Fisheries and to teacbers.

Chief Commissioner or Ckairman

Date Estabisised

Gordon Pughtr Dec. 11, 1964

Sí Brian Dunfield
Jan. 6, 1968

| . | Feb. 3, 1966 |
| :---: | :---: |
| J. D. Fhager. | Feb. 21, 1968 |
| W. G. Adams. | Mar. 3, 1966 |
| G. T. Dyer. | Apr. 22, 1966 |

To inquire into the milk industry
R. L. MacDodgall..

Msy 9, 1966

[^45]Province and Nature of Commission<br>New Brdnswick<br>Committee on the financing of bigber education in New Brunswick.<br>Inquiry into and concerning all negotiations and transactions between Her Majesty the Queen in right of the Province and Coastal Industries Limited and St. Regis Paper Company (Canada) Ltd. from Jan. 1, 1964 to Dec. 31, 1905.<br>\section*{Ontario}<br>To inquire into and make recommendations conceraing the failure of Atlantic Acceptance Corporation Limited to meet its obligations.<br>\section*{Mantora}<br>The Totogan Farms Limited Commission to inquire into circumatances surrounding acquisition by the Crown of certain property.<br>Battise Columbia<br>To inquire into the redefinition of electoral districts.<br>To inquire into automobile insursace rates.<br>Chief Commissioner or Chairman<br>Date<br>$\underline{ }$<br>Dr. John J. Dedtech.<br>Feb. 9, 1966<br>Mr. Justice Ralph V, Limerice. . .<br>Feb. 16, 1966<br>Mr. Justice H. S. Hygurs.<br>Aug. 12, 1965<br>Mr. Justice R. G. B. Dicison..... Feb. 2, 1966<br>Dr. H. F. Angus<br>Aug. 5. 1965<br>Mr. Justice R. A. B. Wootron..... Jan. 25, 1966

## PART III.-ADMINISTRATIVE FUNGTIONS OF THE FEDERAL GOVERNMENT

## Section 1.-Financial Administration*

The financial affairs of the Government of Canada are administered and controlled under the fundamental principles that no tax shall be imposed and no money shall be spent without the authority of Parliament and that expenditures shall be made only for the parposes authorized by Parliament. The most important constitutional provisions relating to Parliament's control of finances are contained in the British North America Act; this Act provides that all taxing and appropriating measures must originate in the House of Commons and all requests for grants must come from the Crown through responsible Ministers, and for such requests the Government is solely responsible. In practice, financial control is exercised through a budgetary system based on the principle that all the financial needs of the Goverament for each fiscal year be considered at one time so that both the current condition and the prospective condition of the public treasury are clearly in evidence.

Estimates and Appropriations.-The co-ordination of the Estimates process is carried out by the Treasury Board. This Board is a separate department of government, its Minister having the designation of President of the Treasury Board. In addition to the President, the Board consists of five other Privy Councillors and the Minister of Finance who serves ex officio as a member. Under the Financial Administration Act, the Board has a statutory duty to advise the Governor in Council on matters relating to finance, estimates, expenditures, financial commitments, establishments, revenues, accounts, terms and conditions of employment of persons in the public service and general administrative policy in the public service (see also p. 141).

The Estimates for any one fiscal year are determined as a result of a two-phased review by the Treasury Board of departmental proposals for expenditure. In the spring of each year, at the request of the Secretary of the Treasury Board, each department submits to the Treasury Board a forecast of Estimates for the current and following four fiscal years.

[^46]During the summer, a review of the programs giving rise to these Estimates forecasts is carried out by the Treasury Board as a result of which tentative Estimates figures are determined for each department for the coming fiscal year. The Board reviews each departmental program submission in the light of probable revenues and governmental policy generally, usually consulting the appropriate Minister and officials. Each department, using these figures as guidelines, develops in detail its manpower and other resource requirements and submits them to the Treasury Board late in October in the form of Main Estimates for the fiscal year beginning Apr. 1. These Estimates are analysed by the Treasury Board staff and compared with the guidelines determined during the spring program review. The Board reviews each departmental submission in the light of the current budgetary outlook. The Estimates may be rejected or reduced and unresolved differences of opinion may be referred to Cabinet for decision. When the Board is satisfied with their substance and form, the Main Estimates are submitted to the Cabinet and later to the Governor in Council for approval and are then laid before the House of Commons.

On motion of the Minister of Finance, the Estimates are referred for consideration to the Committee of Supply, which is a committee of the whole House. However, the Estimates of certain departments may first go to select committees of the House; these, after being reported upon to the House, are referred back to the Committee of Supply. The consideration of the Estimates usually extends over a period of several months. Each vote is the subject of a separate resolution and Members of the House may question the Minister on any item but no private member or Minister on his own responsibility can introduce any new expenditure proposal or any amendment to an Estimates item that would result in an increased expenditure. When the examination of the individual items has been completed, the Estimates are referred to the Committee of Ways and Means, also a committee of the whole House, which is asked to consider a resolution for the introduction of a Bill to appropriate money to meet the requirements as approved in the Committee of Supply. When such resolution is passed, an appropriation Bill is introduced which, when approved by the House of Commons and the Senate, is given Royal Assent and becomes law. Grants in the Appropriation Acts are grants to the Crown and funds cannot be disbursed until the supply voted by Parliament to the Crown is released by a warrant prepared on an Order of the Governor in Council and signed by the Governor General.

As weeks or months may elapse after the commencement of the fiscal year before the main Appropriation Act is passed, funds are made available for the conduct of government functions by the passage of an interim supply Bill granting one sixth of the total of each item in the Estimates, equivalent to two months' supply. Additional interim supply Bills may be introduced if required, awaiting Parliament's detailed consideration of the Estimates. In addition, to cover any new and unforeseen requirements that might arise during the year, Supplementary Estimates are usually introduced after some months of the fiscal year have elapsed, and just prior to the end of the fiscal year further Supplementary Estimates are laid before the House. These Supplementary Estimates are dealt with in the same manner as the Main Estimates,

In addition to the expenditure items included in the annual Appropriation Acts, there are a number of items, such as interest on the public debt, family allowances and old age assistance payments, which have been autborized under the provisions of other statutes. Although it is not necessary for Parliament to pass annually on these items, they are included in the Main Estimates for purposes of information. Statutory provision is also made for the expenditure of public money in emergencies where no specific parliamentary appropriation is available. Under the Financial Administration Act, the Governor in Council, upon the report of the Minister of Finance that there is no appropriation for the expenditure and upon the report of the appropriate Minister that the expenditure is urgently required, may order the issuance of a special warrant authorizing disbursement of the amount required. Such warrants may be issued only when Parliament is not in session and every warrant is published in the Canada Gazette within thirty days of issue.

The Fire Losses Replacement Account Act also provides for emergency expenditures for the urgent repair or replacement of property destroyed or damaged by fire, where there is not sufficient money available in the appropriation for the Service suffering loss. Such amounts must be charged subsequently to an appropriation or included in the Estimates for the department or agency concerned.

In addition, disbursements are made for purposes not reflected in the budgetary accounts but recorded in the Government's statement of assets and liabilities, such as loans to and investments in Crown corporations, loans to international organizations and to national, provincial and muxicipal governments, and loans to veterans. There are also disbursements in connection with deposit and trust accounts and annuity, insurance and pension accounts which the Government holds or administers, including the old age security fund which is operated as a separate entity. Although these disbursements are excluded from the calculation of the annual budgetary surplus or deficit, they are all subject to appropriation by Parliament either in the annual Appropriation Acts or in otber legislation.

The Budget.-Some time after the Main Estimates have been introduced, the Minister of Finance presents his annual Budget Speech in the House of Commons. Budget papers, tabled for the information of Parliament at least one day prior to the presentation of the Budget, include a general review of economic conditions and a preliminary review of the Government's accounts for the fiscal year then ending. The Budget Speech itself reviews the state of the national economy and the financial operations of the Government for the previous fiscal year and gives a forecast of the probable financial requirements for the year ahead, taking into account the Main Estimates and making allowances for Supplementary and further Supplementary Estimates and probable lapsings. At the close of his address, the Minister tables the formal resolutions for changes in the existing tax rates and customs tariff which, in accordance with parliamentary procedure, must precede the introduction of any money Bills. These resolutions give notice of the amendments which the Government intends to ask Parliament to make in the taxation statutes. However, if a change is proposed in a commodity tax, such as a sales tax or excise duty on a particular item, it is usually made effective immediately; the legislation, when passed, is made retroactive to the date of the Speech.

The Budget Speech is delivered in support of a motion that the House go into Committee of Ways and Means, the debate on which usually lasts for several weeks. With the passage of the motion, the way is clear for the consideration of the Budget resolutions and, when these have been approved by the Committee, a report to this effect is made to the House and the tax Bills are introduced and thereafter dealt with in the same manner as all other government financial legislation.

Revenues and Expenditures.-The administrative procedures whereby revenues are collected and expenditures are made are, for the most part, contained in the Financial Administration Act.

With respect to revenues, the basic requirement is that all public money shall be paid into the Consolidated Revenue Fund, which is defined as the aggregate of all public money on deposit to the credit of the Receiver General. The Treasury Board has prescribed detailed regulations governing the receipt and deposit of such money. For the actual custody of public money, use is made of the Bank of Canada and the chartered banks. Balances are allocated to the various chartered banks on the basis of a percentage allocation established by agreement among all the banks and communicated to the Department of Finance by the Canadian Bankers' Association. The daily operating account is maintained with the Bank of Canada and the division of funds between it and the chartered banks takes into account the immediate cash requirements of the Government and consideration of monetary policy. The Minister of Finance may purchase and hold securities of, or guaranteed by, Canada and pay for them out of the Consolidated Revenue Fund or may
sell such securities and pay the proceeds into the Fund. Thus, if cash balances in the Fund are in excess of requirements for the immediate future they may be invested in interestearning assets. In addition, the Minister of Finance has established a purchase fund to assist in the orderly retirement of the public debt.

The principal agencies exercising control over expenditures are the Treasury Board (previously described) and the Comptroller of the Treasury, who has the status of a deputy head but is an officer of the Department of Finance, with representatives who act as accounting and disbursing officers stationed in all the principal departments.

The Treasury Board exercises detailed central control over the budgets, programs and staffs of departments and over financial and administrative matters generally. Although the most important part of this control function is exercised during the consideration of the Estimates, the Board maintains continuous control over certain types of expenditure to ensure that the scale of activities and commitments for the future is beld within approved policies, that departments follow uniform, efficient and economical practices. and that the Government is informed of and approves any major development of policy or significant transaction that might give rise to public or parliamentary criticism.

To ensure that the decisions of Parliament, the Government and Ministers in regard to expenditures are enforced, there is a centralized accounting and disbursing system. The Financial Administration Act provides that no payment shall be made out of the Consolidated Revenue Fund without the authority of Parliament and no charge shall be made against an appropriation except upon the requisition of the appropriate Minister or a person authorized by him in writing. These requisitions, and certificates that the work has been performed, the material supplied or the services rendered and that the price charged is reasonable or according to contract, together with such documents as may be required, are presented to the Comptroller of the Treasury. If the charge is a lawful one against the appropriation and does not exceed the amount of the appropriation or reduce it below the amount necessary to meet other commitments, and does not contravene any applicable legislative or executive requirements, the Comptroller will make the payment. However, if he declines to make a payment, disallows an item in an account or refuses to give a certificate, the Minister concerned may report the circumstances to the Treasury Board for decision and the Board may confirm or overrule the action of the Comptroller. The Comptroller may transmit to the Board any requisition with respect to which he desires its direction and the Board may order that payment be made or refused.

At the beginning of each fiscal year each department submits to the Treasury Board, through the Comptroller, a division or allotment of each item included in its Estimates. Once approved by the Board, these allotments cannot be varied or amended without the approval of the Board and expenditures charged to appropriations are limited to such allotments. To avoid over-expenditures within a fiscal year, the Comptroller records and controls commitments due to come in course of payment within the year for which Parliament has provided or has been asked to provide appropriations. The Government, through the Treasury Board and the Comptroller, also maintains careful control over commitments made under contract that will fall due in succeeding years, since it must be prepared in future to ask Parliament for appropriations to cover them. Any unexpended amounts in the annual appropriations lapse at the end of the year for which they are granted, but for thirty days subsequent to Mar. 31 payments may be made and charged to the previous year's appropriations for debts incurred prior to the end of that fiscal year.

Under the Financial Administration Act, every payment pursuant to an appropriation is made under the control and direction of the Comptroller by cheque drawn on the account of the Receiver General or by such other instrument as the Treasury Board may direct. In practice, the paid Comptroller's cheques are cleared daily by the chartered banks through the Bank of Canada to the Cheque Adjustment Branch of the Comptroller's Office, and reimbursement is made by means of a cheque drawn on the Receiver General's account with the Bank of Canada.

Public Debt.-In addition to the collection and disbursement of public money for budgetary and non-budgetary purposes, the Government receives and disburses substantial sums in connection with its public debt operations. The Minister of Finance is authorized to borrow money by the issue and sale of securities at such rate of interest and subject to such terms and conditions as the Governor in Council may approve. Although the specific authority of Parliament is required for new borrowings, the Financial Administration Act authorizes the Governor in Council to approve the borrowing of such sums of money as are required for the redemption of maturing or called securities and, to ensure that the Consolidated Revenue Fund will be sufficient to meet lawfully authorized disbursements, he may also approve the temporary borrowing of such sums as are necessary for periods not exceeding six months. The Bank of Canada acts as the fiscal agent of the Government in the management of the public debt.

Accounts and Financial Statements.-Under the Financial Administration Act, accounts are kept to show the revenues of Canada, the expenditures made under and the commitments chargeable against each appropriation, the other payments into and out of the Consolidated Revenue Fund, and such of the assets and direct and contingent liabilities as the Minister of Finance believes are required to give a true and fair view of the financial position of Canada. The statement of assets and liabilities is designed to disclose the amount of the net debt, which is determined by offsetting against the gross liabilities only those assets regarded currently as readily realizable or interest- or revenue-producing. Fixed capital assets, such as government buildings and public works, are charged to budgetary expenditures at the time of acquisition or construction and are shown on the statement of assets and liabilities at a nominal value of $\$ 1$.

Annually, on or before Dec. 31 or, if Parliament is not then in session, within fifteen days after the commencement of the ensuing session, the Public Accounts is laid before the House of Commons by the Minister of Finance. The Public Accounts contains a survey of the financial transactions of the fiscal year, statements of the revenues and expenditures for the year and of the assets and direct and contingent liabilities as at the end of the year, together with such other accounts and information as are necessary to show the financial transactions and financial position of Canada or which are required by law to be reported in the Public Accounts. Monthly financial statements are also published in the Canada Gazelle.

The Auditor General. -The Government's accounts are subject to an independent examination by the Auditor General who is an officer of Parliament. With respect to expenditures, this examination is a post-audit for the purposes of reporting whether the accounts have been faithfully and properly kept and whether the money has been expended for the purposes for which it was appropriated by Parliament and the expenditures have been made as authorized; any audit before payment is the responsibility of the Comptroller of the Treasury. With respect to revenues, the Auditor General is required to ascertain that all public money is fully accounted for and that the rules and procedures applied are sufficient to ensure an effective check on the assessment, collection and proper allocation of the revenue. With respect to public property, he is required to satisfy himself that essential records are maintained and that the rules and procedures applied are sufficient to safeguard and control such property. The Auditor General reports to Parliament the results of his examination, calling attention to any case which he considers should be brought to the notice of the House. He also reports to Ministers, the Treasury Board or the Government any matter which in his opinion calls for attention so that remedial action may be taken promptly.

Public Accounts Committee.-It is the usual practice to refer the Public Accounts and the Auditor General's Report to the Public Accounts Committee of the House of Commons, which may review them and report its findings and recommendations to the House of Commons.

## Section 2.-Departments, Boards, Commissions, etc.*

The following paragraphs indicate the functions of the various departments of government and the special boards and commissions in connection with the work of government.

Although it is not possible, owing to the limitations of space, to enumerate in this Section the details of each service or the divisions or sections of all departments, the main branches are given along with those services that differ in some quality from the larger class of subjects handled by a department. The work of many of these departments and boards is given in detail in later Chapters of this volume. The Index will be useful in locating required information.

Department of Agriculture.-This Department was established in 1867 (SC 1868, c. 53) and undertakes work on all phases of agriculture. Research and experimentation are carried out by the Research Branch; the maintenance of standards and protection of products by the Production and Marketing Branch and the Health of Animals Branch; the Canada Grain Act, as it pertains to the inspection, weighing, storage and transportation of grain, is administered by the Board of Grain Commissioners; land reclamation and development is carried out by the Prairie Farm Rehabilitation Administration; and farm income security and price stability are provided under the Crop Insurance Act, the Prairie Farm Assistance Act, the Agricultural Stabilization Act and the Agricultural Products Board. The Farm Credit Corporstion and the Board of Grain Commissioners report to Parliament through the Minister of Agriculture.

Air Transport Board.-The Air Transport Board was established in 1944 by amendment of the Aeronautics Act. The Board is responsible for the economic regulation of commercial air services in Canada and for advising the Minister in the exercise of his duties and powers under the Act in all matters relating to civil aviation. The regulatory function relates to Canadian air services within Canada and abroad, and to foreign air services operating into and out of Canada. It involves the licensing of all such services and the subsequent regulation of the licensees in respect of their economic operation and the provision of service to the public. The Board reports to Parliament tbrough the Minister of Tramsport.

Auditor General's Office.-This Office originated in 1878 (SC 1878, e.7) and currently functions under the Financial Administration Act (RSC 1952, c. 116). The Auditor General is reaponsible for examining accounts relating to the Consolidated Revenue Fund and to public property, and for reporting annually to the House of Commons the results of his examinations. He also audits the accounts of various Crown corporations and other instrumentalities.

Board of Broadcast Goveruors.-This Board, established under the provisions of the Broadcasting Act which was assented to on Sept. 6, 1958, is given authority to regulate radio and television broadcasting in Canada. The Board has authority to regulate the establishment and operation of both public and private broadcasting stations and networks of stations. Applications for licences to eatablish new broadcasting stations, for changes in the facilities of existing stations or for changes in the ownership or in the share structure of licensees are referred to the Board by the Minister of Transport for a recommendation before being dealt with. The Board has three full-time and twelve part-time members. The Secretary of $S_{\text {tate acts as spokesman for the Board in the Cabinet }}$ and the House of Commons.

Board of Grajn Commissioners.-Constituted in 1912 under the Canada Grain Act (RSC 1952, c. 25), the Board of Grain Commissioners for Canada provides general supervision over the physical handling of grain in Canada by licensing elevator operators, inspecting and weighing grain received at and shipped from terminal elevators, and other services. The Board, comprising a Chief Commissioner and two Commissioners, has authority to inquire into any matter relating to the grading and weighing of grain, deductions for dockage or shrinkage, deteriorstion of any grain during storage or treatment, unfair or discriminatory operation of a grain elevator, etc. The Board publishes itg regulations in the Canada Gazette and reports to Parliament through the Minister of Agriculture.

Board of Transport Commissioners for Canada.-The powers of this Board, which was organized as the Board of Railway Commissioners in 1904, have been extended from time to time until today it has regulatory and judicial functions dealing with almost all aspects of railway activity including location, construction and operation of lines, rates and charges. it is also entrusted with the regulation of other transportation and communication agencies, including express companies, telegraph companies, telephone companies other than those provincially or municipally controlled, international bridges and tunnels and inland shipping. The Board reports to Parliament through the Minister of Transport.

[^47]
## the government of canada

THE SOVEREIGN
THE GOVERNOR GENERAL




Canada Fmergency Measures Organization,-This Organization was established in June 1957 to co-ordinate civil emergency planning at the federal level. An Order in Council, effective Sept. 1, 1959, completely revised assignments in the field of civil emergency planning giving responsibilities to 15 departments and agencies of government and giving responsibility, under the Prime Minister, for co-ordination to the Emergency Measures Organization. By Order in Council PC 1963-993 the powers, duties and functions of the Prime Minister relating to civil defence and control of the Emergency Measures Organization were transferred to the Minister of Defence Production. In June 1985, previous Orders were reyoked and replaced by the Civil Emergency Measures Planning Order PC 1965-1041, which schedules civil emergency powers, duties and functions to 12 federal departments and four agencies. The Planning Order directs that the Minister of Industry, through the Emergeney Measures Organization, shall develop policies and a program to ensure continuity of government in an emergency; co-ordinate civil emergency planning and training by departments and agencies of the Government of Canada; plan, in conjunction with provincial authorities, for the control of civil road transport in an emergency; plan civil emergency measures in respect to matters which are not the responsibility of any department, agency or Crown corporation of the Government; provide assistance and guidance to provincial and municipal governments in civil emergency planning matters; provide general liaison with other countries and with NATO on matters relating to civil emergency planning; and be responsible for the direction and administration of the Canadian Civil Defence College. In June 1965, the name of the Organization was changed to Canada Emergency Measures Organization and the name of the college to Canadian Emergency Measures College.

Canadian Government Printing Bureau.-The printing functions formerly provided by the Department of Public Printing and Stationery were transferred by Order in Council (PC 19631254) dated Aug. 21, 1963, to the Department of Defence Production. The latter Department, on Apr. 1, 1964, authorized the organization of the Canadian Government Printing Bureau as a distinct function under that Department, to be separated from the former Publications Branch and the Purchasing Stationery and Stores Branch of the Department of Public Printing and Stationery.

The Canadian Government Printing Bureau, under the direction of a General Manager, provides a variety of printing services, such as House of Commons Debates, Votes and Proceedings, Orders of the Day and other parliamentary papers for both Houses of Parliament, and other printing requirements of government departments and ageacies. The main plant is located in Hull, Que.; smaller field units are located in the Ottawa area and in other major centres to handle the duplicating requirements of individual government departments.

Canadian Penitentlary Service.-The Penitentiary Service operates under the Penitentiary Act (SC 1960-61, $c, 53$ ) and is under the jurisdiction of the Solieitor General of Canada. It is responsible for all federal penitentiary institutions and for the care and training of persons sentenced or committed thereto. The Commissioner of Penitentiaries, under the direction of the Solicitor General, has control and management of the Service and all matters connected therewith.

Canadian Pension Commission.-This Commission, established in 1933 by amendments to the Pension Act (RSC 1952, c. 207), replaced the Board of Pension Commissioners, the first organization created to deal solely with war pensions for service in Canada's Armed Forces. The Commission's main function is the administration of the Pension Act under which it adjudicates upon all claims for pension in respect of disability or death arising out of service in Canada'e Armed Forces; and Parts I to X inclusive of the Civilian War Pensions and Allowances Act, which provide for the payment of pensions in respect of death or disability arising out of civilian service directly related to the prosecution of World War II. It also adjudicates on claims for pension under various other measures; authorizes and pays monetary grants accompanying certain gallantry awards bestowed on members of the Armed Forces; and administers various trust funds established by private individuals for the benefit of veterans and their dependants. The Commission consists of eight to twelve Commissioners and up to five ad hoc Commissioners appointed by the Governor in Council. Its chairman has the rank of a Deputy Head of a department and the Commission reports to Parliament through the Minister of Veterans Affiairs.

Department of Defence Production.-The Department of Defence Production was established in April 1951 by the Defence Production Act (SC 1951, C. 4-now the Defence Production Act, RSC 1952, c. 62, as amended by SC 1955, c. 52). It has exclusive authority for the procurement of goods and services required by the Department of National Defence and, in addition, has the responsibility for ensuring that necessary production capacity and materials are available in Canada to support the defence production program. Measures for which the Department is responsible include defence equipment export activities, the establishment of arrangements with the United States and other friendly countries for co-operative efforts in defence industrial research, development and production, and the management of Canadian participation in the co-operative endeavours of the NATO Armaments Committee.

On Sept 4, 1983, the Goverbment gave to the Department the responsibility for implementing certain recommendations of the Royal Commission on Government Organization relating to the formation of a central purchasing and supply agency. In essence this required that the existing structure of the Department be gradually reshaped in order to accept the function of procurement on bebalf of all civilian departments and agencies other than commercially oriented Crown corpora-
tions, and the civilian supply function. To meet this responsibility there have been established within the Department a Canadian Government Purchasing Service, a Canadian Government Supply Service and a Canadian Government Repair Service which are being developed to form a future Department of Supply.

The Canadian Government Purchasing Service consists of five operational branches: Aircraft, Electrical and Electronics, Machinery, Shipboilding and Heavy Equipment and General Purchasing. The Canadian Government Supply Service consists of six headquarters branches, a Regional Supply Centre operated as a pilot operation in Ottawa, a system of regional purchasing offices in Canada, the United States and Europe, and the Crown Assets Disposal Corporation. The six headquarters branches are: Regional Purchasing, Warehousing and Distribution, Specifications and Standards, Traffic Management, Cataloguing and Quality Management. The Canadian Government Repair Service provides maintenance, repair and overhaul services and technical advice to Federal Government departments and agencies for all non-military machines, equipment and other products located in Canada.

The service and advisory iunctions of the Department are performed by the Contracts Approval Board, the Contract Policy Group, the Legal Adviser and the following branches: Comptroller, Contracts. General Services, Management Control, Management Services and Personnel.

The Emergency Supply Planning Branch is responsible for planning a War Supply Agency which, in the event of a nuclear war, would exercise control over the production, distribution and pricing of civil and military supplies.

The following Crown companies and agencies report to Parliament through the Minister of Defence Production: Canadian Arsenals Limited, Crown Assets Disposal Corporation, Polymer Corporation Limited, Canadian Commercial Corporation and Canada Emergency Measures Organization. The Canadian Government Printing Bureau is also responsible to the Department of Defence Production.

Dominion Bureau of Statistics.-The Dominion Bureau of Statistics was set up by statute in 1918 as a central statistical department for Canada (SC 1918, c. 43). In 1948 this statute, which had been consolidated as the Statistics Act (RSC 1927, c. 190), was repealed and replaced by the Statistics Act (RSC 1952, c. 257); it was amended by SC 1952-53, c. 18, assented to Mar. 31, 1953.

The function of the Dominion Bureau of Statistics is to compile, analyse and publish statistical information relative to the commercial, industrial, financial, social and general condition of the people and to conduct regularly a census of population and agriculture of Canada as required under the Act.

The Bureau is a major publication agency of the Federal Government; its reports cover all aspects of the national economy. The administrative head of the Bureau is the Dominion Statistician who has the rank of a Deputy Head of a department and reports to Parliament through the Minister of Trade and Commerce.

Department of Energy, Mines and Resourees.-Under the terms of the Government Organization Act (SC 1966, c. 25), the Department of Energy, Mines and Resources supersedes the Department of Mines and Technical Surveys and encompasses certain functions formerly conducted by other departments and agencies. The Department, in addition to its administrative services, is organized into four groups: the Research Group includes the Geological Survey of Canada Branch, the Mines Branch, the Surveys and Mapping Branch, the Observatories Branch and the Geographical Branch, all of which are engaged in research and the provision of information in their respective fields; the Mineral Development Group includes the Mineral Economics Branch, which gathers economic data for all minerals for use of government, industry and the public and conducts administrative functions of resource management, and the Explosives Division which controls, under the provisions of the Explosives Act, the production and handling of explosives; the Water Group is concerned with all types of water matters including groundwater and oceanic investigations and surveys. water poliution, water power, water conservation and control, and federal-provincial and international studies and regulations; the Energy Development Group recommends and advises on energy policies in the total context of all energy sources and future energy requirements.

The following Crown corporations report to Parliament through the Minister of Energy, Mines and Resources: the National Energy Board, the Dominion Coal Board, Atomic Energy of Canada Limited. Eldorado Mining and Refining Limited, Eldorado Aviation Limited and the Atomic Energy Control Board.

Department of External Affairs.-This Department was established in 1909 by "An Act to create a Department of External Affairs" (RSC 1952, c. 68). Its main function is the protection and advancement of Canadian interests abroad. The Minister responsible for the Department is the Secretary of State for External Affairs. The senior permanent officer (Deputy Minister) of the Department, the Under-Secretary of State for External Affairs, is assisted by a Deputy UnderSecretary and by four Assistant Under-Secretaries and is advised by the officers in charge of the various divisions. The divisional heads are each responsible for a part of the work of the Department and they are assisted by Foreign Service Officérs, External Affairs Officers, other administrative officers and an administrative staff. Officers serving abroad are formally designated as High Commissioners, Ambassadors, Ministers, Counsellors, First Secretaries, Second Secretaries, Third

Secretaries and Attachés at diplomatic posts and Consuls General, Consuls and Vice-Consuls at consular posts. There are 85 diplomatic, consular and other missions maintained abroad by the Department. In 39 additional countries, Canada is represented by non-resident Ambassadors or High Commissioners.

The work of the Department at Ottawa is performed by 26 divisions and three units. The divisions may be grouped into three categories-area, functional and administrative. There are six area divisions- African and Middle Eastern, Commonwealth, European, Far Eastern, Latin American and United States; fourteen funetional divisions-Communications, Consular, Cultural Affairs, Defence Liaison (1), Defence Liaison (2), Disarmament, Economic, Historical. Information, Legal, Passport. Press and Liaison, Protocol and United Nations; and six administrative divisionsAdministrative Services. Finance, Personnel Operations, Personnel Services. Registry, and Supplies and Properties. The three units are the Inspection Service, the Organization and Methods Unit and the Administrative Improvement Unit.

The International Joint Commission reports to the Secretary of State for External Affairs of Canada as well as to the Secretary of State of the United States. The Secretary of State for External Affairs reports to Parliament Gor the External Aid Office.

Department of Finance.-This Department was created by Act of Parliament in 1869 and now operates under the Financial Administration Act (RSC 1952, c. 116). The Department is responsible for the financial administration of Canada including the raising of money required for the various governmental activities by way of taxation or borrowing. The Comptroller of the Treasury, an officer of the Department, is responsible for all government disbursements. The work of the Department is organized into the following divisions: Tax Policy, Federal-ProvincialMunicipal Relations, Social Security and Pensions, Economic Analysis, Government Finance and Government Guaranteed Loans, Tariffs, International Economic Relations, Resources and Development, and International Programmes. The Royal Canadian Mint is a branch of the Department as is the Inspector General of Banks. The Tariff Board, the Municipal Development and Loan Board, the Bank of Canada and its subsidiary the Industrial Development Bank, and the Department of Insurance report to Parliament through the Minister of Finance who is also the spokesman in the Cabinet and the House of Commons for the Auditor General of Canada.

Department of Fisheries.-The Department of Fisheries was first organized under a Minister of Fisheries in 1930. Prior to that date the federal fisheries services were maintained by the former Department of Marine and Fisheries, established in 1868. The provinces, under various arrangements, have certain administrative responsibilities in the fisheries but the legislative authority for the regulation of coastal and freshwater fisheries is with the federal Department of Fisheries.

The work of the Department includes: resource development and conservation protection of the fisheries through the enforcement of fishing regulations, the operation of fish culture establishments, management and improvement of spawning streams and control of predators; inspection of fish products for quality control and the encouragement of industrial development; promotion of the greatest utilization of fishery products and a proper public understanding of the resource and the industry. The Depart ment administers the Fishermen's Indemnity Plan to assist fishermen in the event of loss or serious damage to their fishing vessels or lobster traps.

Agencies connected with the Department are the Fisheries Prices Support Board and the Fisheries Research Board of Canada. The Department is represented on the following international commissions: Pacific Salmon Fisheries, Pacific Halibut, Northwest Atlantic Fisheries, North Pacific Fisheries, Whaling, Great Lakes Fishery, and North Pacific Fur Seal.

Fisheries Research Board.-The Fisheries Research Board of Canada operstes under the Fisheries Research Board Act of 1937 (amended in 1947 and 1952-53). It has been active as a fisheries research body since 1898, first as the Board of Management of the Canadian Marine Biological Station and Later (1912) as the Biological Board of Canada. The Board operates under the Minister of Fisheries and membership consists of a full-time chairman and not more than 18 other members. The majority of Board members are university scientists, and other members are representative of the fishing industry and the Department of Fisheries.

The Board, with headquarters in Ottawa, operates research establishments in St. John's, Nfld., Halifax and Dartmouth, N.S., St. Andrews, N.B., Ellerslie, P.E.I., Grande-Riviere and Ste. Anne de Bellevue, Que., Winnipeg, Man., Vancouver and Nanaimo, B.C. Board scientists carry out research on distribution of fish stocks, biology and life history of fishes, marine mammals and other aquatic ereatures and plants, oceanography, fishing techniques, quality and nutritive value of fisheries products, with the principal objective of increasing the scope and value of Canadian fisheries.

Department of Forestry and Rural Development.-This Department was established in October 1960 to bring under one Ministry the conduct of programs of research relating to forest management. silviculture, protection against fire, insects and disease, and the improvement in the standards of wood utijization and development of forest products. By Order in Council of Mar. 5, 1964, the responsibilities of the Minister of Forestry were expanded to include the functions formerly exercised by the Minister of Agriculture respecting certain rural development programs under the Agricultural Rehabilitation and Development Act (ARDA), the Maritime Marshland Rehabili-
tation Act, and the administration of the program of freight asgistance and grain storage costs on western feed grains. The name of the ARDA was changed in 1966 (SC 1966, c. 11) to Agricultural and Rural Development Act (ARDA) and the name of the Department was changed under the terms of the Government Organization Act, 1966 (SC 1966, c. 25) to Department of Forestry and Rural Development.

The Forestry Branch of the Department, in addition to the above functions, carries out economic studies of the forest resources and of the forest industries. Financial assistance is offered to the provinces toward meeting specific forestry needs. The Department conducts forest surveys and provides technical assistance to other agencies of the Federal Government responsible for administration of forest lands, and co-operates with international organizations concerned with forestry in which Canada maintains membership. The Department acts as co-ordinator for the seven-agency Technical Committee for Watershed Research of the Eastern Rockies Forest Conservation Board.

The ARDA program of the Department is joined with existing programs of resource management and econotnic development to provide public assistance in meeting problems of physical, economic and social adjustment in rural areas. It also includes a program of soil and water conservation aimed at increasing the productivity of basic rural resources. Through a central and developing information program, the Department seeks to promote public understanding of the value of the forest resources and, in co-operation with the provinces, of the work and purpose of the ARDA program.

The Department administers the Fund for Rural Economic Development Act, 1966 (SC 1966, c. 41 , which provides for the establishment of a fund not exceeding $\$ 50,000,000$ for the economic and social development of special rural development areas. Under this Act the Minister of Forestry and Rural Development may, on the recommendation of the Advisory Board and with the approval of the Governor in Council, enter into an agreement with any province for the joint undertaking of a rural development program in a special rural development area, or may contribute to the cost of such a program undertaken by the province. The Advisory Board consists of not more than ten officials of departments or agencies of the Goverument of Canada, appointed by the Governor in Council.

The Minister of Forestry and Rural Development reports to Parliament for the Eastern Rockies Forest Conservation Board.

Department of Indlan Affairs and Northern Development.-The Department of Indian Affairs and Northern Development was established in June 1966 under the terms of the Government Organization Act (SC 1966, c. 25), superseding the Department of Northern Affairs and National Resources. In addition to the Financial and Management Services, the Department is divided into four Branches: the Natural and Historic Resources Branch, which administers the National Parks, the National Historic Parks and the National Historic Sites coming within the jurisdiction of the Federal Government; the Northern Administration Branch, which is responsible for the administration of various federal Acts, territorial ordinances and regulations pertaining to the Government of the Northwest Territories, for the conduct of certain business arising from the general administration of the Yukon Territory, for the administration of natural resources in those Territories, and for Eskimo affairs: the Indian Affairs Branch, which has the responsibility of assisting the Indians through programs in the field of education, economic development, social welfare and community development so that they may share the rights and responsibilities of citizenship and participate on the basis of equality and opportunity through the full spectrum of Canadian life; and the Canadian Wildlife Service, whicb conducts research on the fauna of Canada and maintains liaison with other international, national, provincial and private agencies and organizations that deal with wildlife.

The Commissioner of the Northwest Territories and the Commissioner of Yukon Territory report to Parliament through the Minister of Indian Affairs and Northern Development. The Minister is also responsible to Parliament for the Northern Canada Power Commission, the National Battlefields Commission, the Historic Sites and Monuments Board of Canada which is an honorary body of recognized bistorians representing the various provinces, and the Northern Transportation Company Limited. The Advisory Committee on Northern Development acts in an advisory capacity to the Minister. The Deputy Minister is Chairman of the Northern Canada Power Commission.

Department of Industry.-Under the Department of Industry Act (SC 1963, c. 3), the Minister of Industry is responsible for promoting the establishment, growth, efficiency and improvement of manufacturing industries in Canada through the development and implementation of programs to assist manufacturers to adjust to changing market conditions, to help them develop new lines of production and enter new markets, and to promote greater industrial research and development as well as good design within Canadian industry.

The Department of Industry is also responsible for undertaking research and investigations on an area or regional basis and preparing programs of development for designated areas of high unemployment and slow economic growth. As a part of these programs, various Federal Government incentive measures are administered.

The Department is organized into ten industry branches: Aircraft, Chemicals, Apparel and Textiles, Electrical and Electronics, Food Products, Machinery. Materials, Mechanical Transport. Shipbuilding and Heavy Equipment, and Wood Products (see also Department of Defence Pro-
duction, p. 131). The Area Development Agency carries out the work associated with regional programs and the National Design Branch, in co-operation with the National Design Council, undertakes programs to promote and encourage good design in Canadian products.

The Program Advisory Group consists of a smail number of officers experienced in economica, commercial policy, industrial research and development. Their function is to advise the Department in these areas and to co-ordinate departmental programs related to them.

Department of Insurance.-The Minister of Finance is responsible for the Department of Insurance which originated in 1875 as a branch of the Department of Finabce but was constituted a separate Department in 1910. It is authorized and governed by the Department of Insurance Act (RSC 1952, c. 70). Under the Superintendent of Insurance, who is the Deputy Head, the Department administers the statutes of Canada applicable to: insurance, loan and trust companies incorporated by the Parliament of Canada; provincially incorporated insurance companies registered with the Department; British and foreign insurance companies operating in Canada; small loans companies and money-lenders; co-operative credit societies registered under the Co-operative Credit Associations Act; and public service insurance.

Under the relevant provincial statutes, the Department examines trust companies incorporated in the Provinces of Manitoba and New Brunswick and loas and trust companies incorporated in the Province of Nova Scotia.

International Joint Commission.-This Commission was established under a Britain-United States treaty signed Jan. 11, 1909 and ratified by Canada in 1911. The Commission, composed of six members (three appointed by the President of the United States and three by the Government of Cansda), is governed by five specific Articles of the Boundary Waters Treaty of 1909. The Commission's approval is required for any use, obstruction or diversion of boundary waters affecting the natural level or flow of boundary waters in the other country; and for any works in waters flowing from boundary waters or below the boundary in rivers flowing across the boundary which raise the natural level of waters on the other side of the boundary.

Problems arising along the common frontier are also referred to the Commission by either country for examination and report, such report to contain appropriate conclusions and recommendations. In addition, questious or matters of difference between the two countries may be referred to the Commission for decision, provided both countries consent.

The Commisaion reports to the Secretary of State for External Affairs of Canada and to the Secretary of State of the United States.

Department of Justice.-This Department, established by SC 1868, c. 39, now operates under authority of the Department of Justice Act (RSC 1952, c. 71 as amended by SC 1960, c. 4 and SC 1966, c. 25). The Minister of Justice is the official legal adviser of the Governor General and the legal member of the Queen's Privy Council for Canada. It is his duty to see that the administration of public affairs is in accordance with law, to superintend all matters convected with the administration of justice in Canada that are not within the jurisdiction of the provincial governments, to advise upon the legislation and proceedings of the provincial legislatures and generally to advise the Crown upon all matters of law referred to him by the Crown. The Minister of Justice is, ex officio. Her Majesty's Attorney General of Canada. In this capacity it is bis duty to advise the heads of the departmente of the Government of Canada upon all matters of law connected with such departments, to settle and approve all instruments issued under the Great Seal of Canada, and to regulate and conduct all litigation for or againgt the Crown in the right of Canada.

Department or Labour.-The Department of Labour was established in 1900 by Act of Parliament (SC 1900, c. 24) and now operates under authority of the Department of Labour Act (RSC 1952, e. 72). The Department administers, under the Minister of Labour, legislation dealing with: industrial relations, investigation of disputes, etc.; fair employment practices; the regulation of fair wages and hours of labour; female employee equal pay; government annuities; government employee compensation; merchant seamen compensation; and hours of work, minimum wages, annual vacations and holidays with pay. It promotes joint consultation with industry through labourmanagement committees and operates a Women's Bureau. The Department publishes the Labour Gazette snd other publications, as well as general iniormation on labour-management, employment, manpower and related subjects.

The Merchant Seamen Compensation Board reports to the Minister of Labour. The Department is the official liaison agency between the Canadian Government and the International Labour Organization. The Unemployment Insurance Commission, the Chairman of the Board of Trustees of the Maritime Transportation Unions, the Central Mortgage and Housing Corporation and the Canada Labour Relations Board report to Parliament through the Minister of Labour. The Canada Labour Relations Board administers certain provisions of the Industrial Relations and Disputes Investigation Act.

Library of Parliament.-The Library of Parliament as such was established in 1871 (SC 1871, e. 21) although it existed earlier. It currently functions under RSC 1952, c. 166 and SC 1955, c. 35. The Library of Parliament keeps all books, maps and other articles that are in the joint possession of the Senate and the House of Commons. The Parliamentary Librarian is also re-
sponsible for the House of Commons Reading Room. Persons entitled to borrow books from the Library of Parliament are the Governor General, Members of the Privy Council, Members of the Senate and the House of Commons, Officers of the two Houses, Justices of the Supreme Court of Canada and the Exchequer Court, and members of the Press Gallery. In addition, books are lent to other libraries and government, agencies and reference service is given to scholars. A special research branch serves Parliamentarians only. The Parliamentary Librarian has the rank of a Deputy Head of a department and is responsible for the control and management of the Library under the Speaker of the Senate and the Speaker of the House of Commons assisted by a Joint Committee appointed by the two Houses.

Department of Manpower and Immigration.-This Department was constituted in June 1966 by the Government Organization Act (SC 1966, c. 25), which was proclaimed effective on Oct. 1, 1966, under the Minister of Manpower and Immigration. The Department is composed of two operational services and four support services. The Canadian immigration service administers the Immigration Act and Regulations and is responsible for the selection, examination and movement of immigrants and for the exelusion or deportation of undesirables. The Department's employment service is responsible for: the manpower mobility program; assisting in the recruitment and placement of workers to meet industry's requirements; community adjustment of immigrants and migrants; occupational and job classifications and descriptions; selection techniques; testing methods; vocational and technical training. rehabilitation of the vocationally handicapped; and municipal winter works incentive prograns and winter employment campaigns. The Department also has a service which is responsible for the development and evaluation of departmental programs; research; the operation of pilot projects in training and other areas; legislation and legal services; and emergency manpower planning at the national level. Other support services are Financial and Management; Personnel; and Information.

The Canadian immigration service, until Oct. 1, 1966, was part of the Department of Citizenship and Immigration which has been renamed the Department of Manpower and Immigration; the majority of the other components of the Department were, prior to Oct. 1, 1966, under the jurisdietion of the Department of Labour.

The Immigration Appeal Board, which deals with appeals made against Orders of Deportation, reports to the Minister of Manpower and Immigration. The National Advisory Committee on the Rehabilitation of Disabled Persons, the National Technical and Vocational Training Advisory Council and the National Employment Committee act in an advisory capacity to the Minister.

Department of National Defence.-The Department of National Defence and the Canadian Forces operate under the National Defence Act (RSC 1952, c. 184). The Canadian Forces are administered by the Minister of National Defence and the Associate Minister of National Delence. Since August 1964, when a single Chief of the Defence Staff was appointed, the reorganization of the Canadian Forces Headquarters, the command structure and the consolidation of the Canadian Forces Bases has been proceeding. In June 1965, a plan was announced to reduce the previous major commands in Canada to six: Maritime, Mobile, Air Transport, Air Defence, Training and Materiel. This accomplished, the stage has been reached for final steps toward a single unified force.

The Defence Research Board, created in 1947 to carry out research relating to national defence and to advise the Minister on all relevant matters of a scientific or technical nature, functions under the National Defence Act. The Crown corporation, Defence Construction (1951) Limited, reports to Parlisment through the Associate Minister of National Defence.

National Energy Board.-This Board was established under the National Energy Board Act, 1959 for the broad purpose of assuring the best use of energy resources in Canada. The Board, composed of five members, is responsible for the regulation of the construction and operation of the oil and gas pipelines that are under the jurisdiction of the Parliament of Canada, the tolls charged for transmission by oil and gas pipelines, the export and import of gas and the export of electric power, and the construction of the lines over which such power is transmitted. The Board is also required to study and keep under review all matters relating to energy under the jurisdiction of the Parliament of Canada and to recommend such measures as it considers necessary and advisable on the subject. The Board reports to Parliament through the Minister of Energy, Mines and Resources.

National FIm Board.-The National Film Board, established in 1930. operates under the National Film Act (RSC 1952, c. 185) which provides for a Board of Governors of nine membersa Government Film Commissioner, appointed by the Governor in Council, who is chairman of the Board, three members from the public service of Canada and five members from outside the public service. The Board reports to Parliament through the Secretary of State. The Board is responsible for advising the Governor in Council on film activities and is authorized to produce and distribute films in the national interest and, in particular, films "designed to interpret Canada to Canadians and to other nations"

Department of National Health and Welfare.-This Department was established in October 1944 under authority of the Department of National Health and Welfare Act (RSC 1952, c. 74).

It was originally formed as the Department of Health in 1919 and later became part of the Department of Pensions and National Health. That Department was replaced in 1944 by the Department of National Health and Welfare and the Department of Veterans Affairs.

The Department, headed by the Minister of National Health and Welfare, is composed of three branches-Administration, Health and Welfare-and is administered by two Deputy Ministers.

The Department has charge of all matters relating to the promotion or preservation of the health, social security and social weliare of the people of Canada over which the Federal Parliament has jurisdiction. It administers the Acts listed in Sect. 4, p. 153, and is also responsible for: the administration of the National Health Program under which grante are made available to the provinces for the development and extension of health services; the federal aspects of emergency health and welfare services; health and safety in the peaceful uses of atomic energy and other sources of radiation affecting the population; the provision of health, medical and hospital services to Indians and Eskimos and to other elements of the population in the Yukon and Northwest Territories; the provision of assistance and consultative services to the provinces upon request on blindness control, child and maternal health, environmental health, mental health, dental health, nursing, medical rehabilitation, bacteriology, virology, parasitology and clinical chemistry, zoonoses, nutrition and bealth facilities design; the inspection and medical care of immigrants and seamen and the administration of marine hospitals; the supervision of public health facilities on railway, water and other forms of transportation; the euforcement of regulations of the International Joint Commission relating to public health; the promotion and conservation of the health of government employees; the collection, publication and distribution, subject to the provisions of the Statistics Act, of information relating to public health, improved sanitation and social and industrial conditions affecting the health of Canadians. It coordinates and assists international welfare activities in which Canada is engaged and administers a system of grants to the provinces for professional welfare training, welfare research and general welfare services.

National Library.-The National Library came formally into existence on Jan. 1, 1953, with the proclamation of the National Library Act (RSC 1952, c. 330). It publishes Canadiana, a monthly catalogue of new publications relating to Canada, with an annual cumulation. The Library also publishes other bibliographies. Its Reference Division maintains the National Union Catalopue, which embodies the author catalogues of the major libraries in the ten provinces and is thus a key to the book collections of the whole country. Its book collection is growing steadily and at the end of 1965 consisted of over 300,000 volumes. The National Librarian reports to Parliament through the Secretary of State.

National Parole Board.-The establishment of the National Parole Board, which was formed in January 1959, is authorized by the Parole Act (SC 1958, c. 38) by which it is given absolute jurisdiction over all matters of parole. It is composed of a chairman and four members appointed by Order in Council for a ten-year period. The Board reports to Parliament through the Solicitor General of Canada.

Department of National Revenue.-From Confederation until May 1918, customs and inland revenue Acts were administered by separate departments; after that date they were amalgamated under one Minister as the Department of Customs and Inland Revenue. In 1921 the name was changed to the Department of Customs and Excise. In April 1924 collection of income taxes was placed under the Minister of Customs and Excise and, under the Department of National Revenue Act, 1927, the Department became known as the Department of National Revenue.

The Customs and Excise Division of the Department is responsible for the assessment and collection of customs and excise duties as well as of sales and excise taxes. The Taxation Division is responsible for the assessment and collection of income taxes, gift tax, old age security tax, Part I of the Canada Pension Plan, and estate taxes for Canada and all provinces, except Quebec, through its 29 district taxation offices and its Taxation Data Centre.

The Minister of National Revenue is responsible to Parliament for the Tax Appeal Board.
Office of the Chief Electoral Officer. -This Office was established in 1920 under the provisions of the Dominion Elections Act, now the Canada Elections Act (RSC 1960, c. 39, and amendments thereto), and is responsible for the conduct of all federal elections as well as the elections of members of the Northwest Territories Council and of the Yukon Territory Council. In addition, it conducts any vote taken under the Canada Temperance Act. The Chief Electoral Officer is responsible directly to Parliament, the Secretary of State acting as spokesman for him in the Cabinet and the House of Commons.

Offce of the Comptroller of the Treasury.-The Comptroller of the Treasury is an officer of the Department of Finance appointed by the Governor in Council. Under the authority of the Financial Administration Act, he has the statutory responsibility of ensuring that no payment out of the Consolidated Revenue Fund is made for a purpose not authorized by or in excess of an amount appropriated by Parliament and that all relevant executive regulations are observed. For this
purpose, he conducts a pre-audit of all payments except those under the Travel Regulations. He also provides a cheque-issue and accounting service for all departments and is responsible for the preparation of the Public Accounts and other financial statements of the government.

Office of the Representation Commissioner.- This Office was established in 1963 under the provisions of the Representation Commissioner Act (SC 1963, c. 40) and is responsible for preparing maps showing the distribution of population in each province and setting out alternative proposals respecting the boundaries of electoral districts in each province. In addition, it is required to make a review and study methods of registration of electors and absentee voting used in elections of other countries. The Secretary of State acts as spokesman for the Office in the Cabinet and the House of Commons.

Post Office Department.-Administration and operation of the Canada Post Office, by virtue of the Post Office Act (RSC 1952, c. 212) and under the Postmaster General, includes all phases of postal activity, personnel, mail handling, transportation of mails by land, water, rail and air and the direction and control of financial services including the operation of money order and savings bank business.

Privy Council Office.-For administrative purposes, the Privy Council Office is regarded as a Department of Government under the Prime Minister. The Clerk of the Privy Council, under whose direction its functions are carried out, is considered as a Deputy Head and takes precedence among the chief officers of the Public Service. The authority of the Privy Council Office is to be found in Sects. 11 and 130 of the British North America Act, 1867, which constituted a Council to aid and advise in the government of Canada to be styled the Queen's Privy Council for Canada. In 1940, upon the wartime development of Cabinet committees and the consequent need for orderly secretarial procedures such as agenda, explanatory memoranda and minutes, the Principal Secretary in the Prime Minister's Office was designated Clerk of the Privy Council and First Secretary to the Cabinet. Since 1946, the Privy Council Office has been further reorganized, developed and enlarged and certain administrative functions of the Privy Council Office and the Prime Minister's Office have been closely integrated in the interests of efficiency and economy.

The organization of the Privy Council Office at present consists primarily of the Privy Council Section concerned with the examination of submissions to the Governor in Council, preparation of draft orders and regulations, circulation and filing of approved orders, and the duties of editing, registering and publishing the federal statutory regulations in Part II of the Canada Gazette; the Cabinet Section dealing with secretarial work for the Cabinet and for Cabinet committees and interdepartmental committees, such as the preparation and circulation of agenda and necessary documents to Ministers and recording and circulating decisions, liaison with departments and agencies of government, and the preparation of material for the Prime Minister; the Science Secretariat established in 1964 to assemble and analyse information about the Government's scientific programs and their inter-relation with other scientific activities throughout Canada; the Special Planning Secretariat established in 1965 to assess the extent and nature of the problems of poverty and inadequate opportunities in Canada, to analyse existing federal measures and to develop proposals for future federal programs aimed at overcoming inadequate economic and social opportunities; and the Special Secretariat on Bilingualism established in 1966.

The Office of the Prime Minister is organized as a Secretariat associated with the Privy Council Office and includes members of the Prime Minister's personal staff responsible for general secretarial duties, the drafting of letters, the arrangement of appointments to interview the Prime Minister or for his public appearances or for the release of his statements on matters of public interest, and assisting the Prime Minister in his parliamentary duties.

Public Archives.-The Public Archives was founded in 1872 and is administered under the Public Archives Act (RSC 1952, c. 222) by the Dominion Archivist who has the rank of a Deputy Minister and reports to Parliament through the Secretary of State. Its purpose is to assemble and make available to the public a comprehensive collection of historical source material relating to the history of Canada. Major emphasis is placed on official records of the Government and the personal papers of political leaders and other prominent figures. These are supplemented by copies of many records in the British and French archives that relate to Canada, a fine map collection, a historical library, and many prints, paintings and photographs. The Archives operates a large Records Centre which provides accommodation for departmental records that are seldom used and also serves as a sorting centre, preserving papers of long-term interest from obsolete files and marking useless material for destruction. The Government's Central Microfilm Unit is housed in the Records Centre.

Under the terms of the Laurier House Act (RSC 1952, c. 163) the Public Archives is responsible for the administration of Laurier House as a museum and study centre.

Public Service Commission.-At the time of writing (November 1966) a Bill is before Parliament which will, if passed,* replace the Civil Service Act of 1961; it is under this Act that the Civil Service Commission, the central personnel agency of the Federal Government, operates.

[^48]The Commission is the custodian of the merit system of employment and promotion in the Civil Service and is concerned with most other aspects of personnel administration. However, the proposed Public Service Employment Act will change many functions of the (Public Service) Commission (see the 1966 Year Book, pp. 143-145). It reaffirms the merit principle and makes possible the extension of its application to certain groups of employees now exempt from the provisions of the Civil Service Act; although permitting the delegation of authority to deputy heads and their offeers for making appointments to and within the Public Service, the Commission will maintain centralized staffing operations for groups whose occupations are common to all departments and for certain specialized classes; the Commission will still be responsible for all appointments and report annually to Parliament, through the Secretary of State, on the discharge of this responsibility. The Commission will be relieved of the responsibility of recommending rates of pay and certain conditions of employment and also of all matters that would be directly or indirectly the subject of bargaining.

Department of Public Works.-The Department was constituted in 1867 and operates under the legislative authority of the Public Works Act and other Acts of Parliament. It is responsible for the management and direction of the public works of Canada and, except as specifically provided in other Acts, attends to the construction and maintenance of public buildings, wharves, piers. roads and bridges and the undertaking of dredging and navigable waters protection work. Federal Government interest in the Trans-Canada Highway and the Northwest Highway System is also handled by the Department. The Department maintains district offces at key points across the country. The Branches and Divisions of the Department are: Harbours and Rivers Engineering, Building Construction, Development Engineering, Property and Building Management, Administrative Services, Economic Studies, Financial Services, Fire Prevention, Iniormation Services, Legal Services and Personnel.

The Minister of Public Works is also responsible to Parliament for the National Capital Commission.

Department of the Registrar General.-This Department was established by the Government Organization Act, 1966 (SC 1966, c. 25) which was proclaimed effective Oct. 1, 1966. It is presided over by the Registrar General of Canada whose duties include all matters over which the Parliament of Canada has jurisdiction relating to combines, mergers, monopolies and restraint of trade; patents, copyrights and trade marks; bankruptcy and insolvency; and corporate affairs. His functions also include the registration of all instruments issued under the Great Seal of Canada.

Royal Canadian Mounted Police.-The Royal Canadian Mounted Police, a civil force maintained by the Federal Government, was organized in 1873 as the North-West Mounted Police. It now operates under the Royal Canadian Mounted Police Act, 1959 and is responsible for enforcing federal laws throughout Canada. By agreement with certain provincial governments, it is also responsible for enforcing provincial laws within those provinces and for policing many district municipalities, cities and towns. A Commissioner, appointed by the Governor in Council, bas the control and management of the Force and of all matters connected therewith; he functions under the direction of the Solicitor General of Canada.

Department of the Secretary of State.-The duties, powers and functions of the Secretary of State of Canada extend to and include all matters over which the Parliament of Canada has jurisdiction, not by law assigned to any other department, branch or agency of the Government of Canada, relating to: citizenship; elections; State ceremonial, the conduct of State correspondence and the custody of State records and documents; the encouragement of the literary, visual and performing arts, learning and cultural activities; and libraries, arehives, historical resources, museums, galleries, theatres, films and broadcasting.

The responsibilities of the Department of the Secretary of State include those pertaining to the administration of the following braches: Citizenship; Citizenship Registration; financial support for higher education; National Museum of Canada; Secretariat and Parliamentary Returns; and Translation Bureau.

The Secretary of State of Canada reports to Parliament for the Centennial Commission, the National Arts Centre Corporation, the National Film Board, the National Library, the Public Archives, the National Gallery and the Office of the Queen's Printer (Publisher), and is spokesman im the Cabinet and the House of Commons for the Board of Broadcast Governors, the Canada Council, the Canadian Broadcasting Corporation, the Public Service Commission, the Office of the Chiel Electoral Officer and the Office of the Representation Commissioner.

Department of the Solicitor General.-Before 1936, the Office of the Solicitor General was either a Cabinet post or a Ministerial post outside the Cabinet. From 1936 to 1945 the position did not exist, the duties of the Office being wholly absorbed by the Attorney General of Canada. The Solicitor General Act, 1945 (RSC 1952, c. 253) re-established the Solicitor General as a Cabinet officer and provided that "... The Solicitor General shall assist the Minister of Justice in the Counsel work of the Department of Justice, and shall be charged with such other duties as are at any time assigned to him by the Governor-in-Council". Tbis legislation was repealed by the Government Organization Act, 1966 (SC 1966, c. 25), which created a new Department of the Solicitor General
and assigned to the Solicitor General of Canada responsibility for the Royal Canadian Mounted Police the Canadian Penitentiary Service and the National Parole Board. With this new legislation, the Solicitor General of Canada becomes the Cabinet Minister with primary responsibility in the fields of crime and correction.

Tariff Board.-Constituted in 1931, the Board derives its duties and powers from three statutes: the Tariff Board Act (RSC 1952, c. 261, as amended); the Customs Act (RSC 1952, c. 58, as amended); and the Excise Tax Act (RSC 1952, e. 100, as amended).

Under the Tariff Board Act, the Board makes inquiry into and reports upon any matter in relation to goods that, if brought into Canada, are subject to or exempt from duties of customs or excise taxes. Reports of the Board are tabled in Parliament by the Minister of Finance. It is also the duty of the Board to hold an inquiry under Sect. 14 of the Customs Tariff and to ioquire into any other matter in relation to the trade and commerce of Canada that the Governor in Council sees fit to refer to the Board for inquiry and report.

Under the provisions of the Customs Act and the Excise Tax Act, the Tariff Board acts as a court to hear appeals from rulings of the Department of National Revenue, Customs and Excise Division, in respect of excise taxes, tariff classification, value for duty, and drawback of customs duties. Declarations of the Board on appeals on questions of fact are final and conclusive but the Acts contain provisions for appeal on questions of law to the Exchequer Court of Canada.

Tax Appeal Board.-The Tax Appeal Board (created in 1946 as the Income Tax Appeal Board) now operates under the Income Tax Act (RSC 1952, c. 148 as amended). The Board is declared by statute to be a court of record and has jurisdiction to hear and determine appeals by taxpayers against their assessment under the Income Tax Act and also appeals under the Estate Tax Act. An appeal lies from the Board to the Exchequer Court of Canada and a further appeal irom that court to the Supreme Court of Canada. The Board consists of a chairman, an assistant chairman and four other members. Its offices are located at Ottawa and it hears appeals at the principal centres throughout Canada approximately twice a year and at the main centres, such as Montreal and Toronto, six times a year. The Board is under the jurisdiction of the Minister of National Revenue but is independent of the Department of National Revenue.

Department of Trade and Commerce.-The Department of Trade and Commerce has consistently expanded its services to the business community since becoming functional in 1892, almost five years aiter establishment was approved by an Act of Parliament. Today the Department has 202 Trade Commissioners on its staff serving at headquarters in Ottawa and at 66 posts in 46 countries abroad; this figure includes Assistant Trade Commissioners in training as well as agricultural, fisheries, publicity and timber specialists. Trade Commissioners carry such titles as Minister (Commercial), Commercial Counsellor or Commercial Secretary and hold diplomatic status if they are members of a mission maintained by the Department of External Affairs.

The Department comprises three principal services: Trade Policy governs trade relations; External Trade Promotion is responsible for the Canadian Government Travel Bureau, the Canadian Government Exhibition Commission, the Trade Commissioner Service, and the Trade Publicity and Trade Fairs and Missions Branches; the Commodities and Industries Services incorporates the Agriculture and Fisheries Branch, Industrial Materials Branch, Manufacturing Industries and Engineering Branch, and the Transportation and Trade Services Branch.

Crown corporations and agencies that report to Parliament through the Minister of Trade and Commerce include the Dominion Bureau of Statistics, the Export Credits Insurance Corporation, the Canadian Corporation for the 1967 World Exhibition, the Canadian Government Participation, 1967 Exhibition and the Canadian Wheat Board.

Department of Transport.-The Department was created on Nov, 2, 1936 from the former Departments of Marine and of Railways and Canals, and the Civil Aviation Branch of the Department of National Defence (RSC 1952, c. 79).

The work of the Department consists of two main Services-Marine and Air. Marine Eervice operations include aids to navigation, nautical and pilotage services, marine agencies, secondary canals, steamship inspection, the Canadian Coast Guard, and direct supervision over 300 public harbours; 11 other harbours come under supervision of the Department but are administered by commissions. Air Services cover the operation of the Telecommunications and Electronics, Civil Aviation, and Meteorological Branches. The work of the Telecommunications and Electronics Branch includes the administration of national and international radio laws, regulations and agreements; it is also responsible for the construction, installation, maintenance and operation of aeronautical, marine and meteorological radio-communication stations and of radio and electronics aids to marine and air navigation.

The Minister of Transport is responsible to Parliament for the following boards, commissions and Crown companies: Air Canada, the Air Transport Board, the Board of Transport Commissioners, the Canadian Maritime Commission, the National Harbours Board, the St. Lawrence Seaway Authority, the Canadian Overseas Telecommunication Corporation, the Canadian National Railways and the Atlantic Development Board.

Treasury Board.-The Treasury Board was first established as a committee of the Queen's Privy Council for Canads by PC 3 of July 2, 1867; it was subsequently made statutory in 1809. With the Minister of Finance as Chairman, and the administrative staff (including the Secretary of the Board) provided by the Department of Finance, the Board has, from its inception, exercised oversight, on behalf of the Governor in Council, over the financial affairs of the various departments and agencies of the Government.

By the Government Organization Aet, 1966 (SC 1966, e. 25), these historic, organic links between the Minister and the Department of Finance and the Treasury Board were altered in a number of important respects. The Board was established as a separate department of government under its own Minister, the President of the Treasury Board. The membership of the Board was enlarged from six to seven, with the Minister of Finance serving ex offcio as a member, together with five additional Privy Councillors designated by the Governor in Council. The President of the Board, in addition to assuming the duties formerly vested in the Minister of Finance as Chairman of the Board, became the Minister responsible for the new Department and, in this capacity, was given, for the first time, power to act on behalf of the Board in intervals between Board meetings. This marked an important step in the evolution of the Board from a committee of Ministers to a department of government, with certain managerial and administrative responsibilities in its own right.

The powers and duties of the Board continue to be governed by the Financial Administration Act (RSC 1952, c. 116) which was also amended in a number of important respects in 1966. The effect of these amendments was to establish the Treasury Board, even more clearly than before, as the agency of government chiefly responsible for formulating central management folicy, issuing directives and guidelines, and monitoring departmental performance in a wide variety of fields. These include most financial management functions, e.g., short- and long-range expenditure forecasting, program analysis, estimates preparation, supervision and control of expenditures, leases, contracts, financial commitments, etc. Responsibility for providing leadership and stimulus to improved management performance and to the application of modern, efficient administrative methods within departments and agencies was also vested, for the first time, explicitly in the Board.

Possibly the most important change in the duties and responsibilities of the Doard was in the field of personnel management. This resulted in part from the recommendations of the Royal Commission on Government Organization and in part from the designation of the Bcard as the principal agent of the employer in collective bargaining-a role assigned to it by the provisions of the Public Service Staff Relations Aet of 1966 . The Board had assigned to it, in addition to its previous duties relating to organization and establishment control, exclusive responsibility for classification, rates of pay and conditions of employment, a responsibinity previously shared with the Civil Service Commission (now Public Service Commission) and for determining generally the policy governing personnel management in the public service. The legislation assigning these new responsibilities to the Board contemplates and provides for extensive delegation of the Eoard's autbority to the operating departments, under terms and conditions established by the Board.

The Treasury Board, in the new role assigned to it in the fields of financial management, personnel management and administrative improvement, conforms closely in most respects to the concept of the Treasury Board as the central management agency for the Government of Canada, outlined in 1962 in the first Report of the Royal Commission on Government Organization (Glassco Commission).

Department of Veterans Affairs.-This Department, established in 1944 (RSC 1952, c. 80), is concerned exclusively with the welfare of veterans and with the dependants of veterans and of those who died on active service. The Department provides treatment services (hospital, medical, dental and prosthetic), welfare services, education assistance, life insurance, and land settlement and home construction assistance. The Veterans' Bureau assists veterans in the preparation and presentation of pension claims.

The Canadian Pension Commission established by the Pension Act (RSC 1952, c. 207), and the War Veterans Allowance Board established by the War Veterans Allowance Act (RSC 1952, c. 340) also report to Parliament through the Minister of Veterans Affairs.

The Department has treatment institutions and facilities in a number of urban centres. It also maintains, in large cities across Canada, administrative offices. which are shared with the Canadian Pension Commission and the War Veterans Allowance Board, and an office in London, England.

War Veterans Allowance Board.-This Board, established under the authority of the War Veterans Allowance Act, 1930 (RSC 1952, c. 340 as amended), is a statutory body responsible to the Miaister of Veterans Affairs for the administration of the Act and for the administration of Part XI of the Civilian War Pensions and Allowances Act relating to certain groups of civilians who performed meritorious service in either World War I or II. It consists of three to ten members (three to five permanent, up to three temporary. and up to two additional without pay) appointed by the Governor in Council. Its functions include the responsibility of ensuring that all 19 District Authorities located in various regions throughout Canada interpret the legislation in a fair, reasonable and equitable manner. It is also an appeal body and may consider an appeal of an appellant against the decision of a District Authority.

## Section 3.-Crown Corporations

The Crown corporation form of public enterprise is not a new type of organization in Canada but in recent years, as the work of government has become more complex, greater reliance has been placed on it as the appropriate instrument for administering and managing many public services in which business enterprise and public accountability must be combined.

The use of the corporate device to harmonize public responsibility in the development of economic resources and the provision of public services with the pursuit of commercial and industrial objectives has led to the adoption of many different forms and formulas of management. The most usual practice has been to set up a corporation under the provisions of a special Act of Parliament which defines its purposes and sets forth its powers and responsibilities. However, during World War II the Minister of Munitions and Supply was authorized to procure the incorporation of companies under the federal Companies Act, 1934, or under any provincial Companies Act to which he might delegate any of the powers conferred on him under the Department of Munitions and Supply Act or any Order in Council. Under this legislation about 28 companies were created to serve a wide variety of purposes; most of these companies have since been wound up.

Following the successful experience during the war years in relying on the Companies Act for the establishment of Crown companies, similar incorporating powers were granted by an amendment to the Research Council Act and have been incorporated in the Atomic Energy Control and the Defence Production Acts.

In 1946 the Government Companies Operation Act was passed to regulate the operation of companies formed under the Companies Act. However, it was applicable only to a relatively small number of companies and, in order to establish a more uniform system of financial and budgetary control and of accounting, auditing and reporting for Crown corporations generally, Part VIII of the Financial Administration Act was enacted in 1951 and brought into operation by proclamation on Oct. 1, 1952. Upon its enactment the financial provisions of the Government Companies Operation Act were repealed.

One of the more interesting features of the later legislation is the attempt that has been made to define and classify Crown corporations.* The Act defines a Crown corporation as a corporation that is ultimately accountable, through a Minister, to Parliament for the conduct of its affairs and establishes three classes of corporation-departmental, agency and proprietary.

Departmental Corporations.-A departmental corporation is defined as a Crown corporation that is a servant or agent of Her Majesty in right of Canada and is responsible for administrative, supervisory or regulatory services of a governmental nature. Twelve departmental corporations are listed in Schedule B to the Act:-

Agricultural Stabilization Board (formerly Agricultural Prices Support Board)<br>Atomic Energy Control Board<br>Canadian Maritime Commission<br>Director of Soldier Settlement<br>The Director, The Veterans' Land Act<br>Dominion Coal Board<br>Economic Council of Canada<br>Fisheries Prices Support Board<br>Municipal Development and Loan Board<br>National Gallery of Canada<br>National Research Council<br>Unemployment Insurance Commission.

[^49]Agency Corporations.-An agency corporation is defined as a Crown corporation that is an agent of Her Majesty in right of Canada and is responsible for the management of trading or service operations on a quasi-commercial basis or for the management of procurement, construction or disposal activities on behalf of Her Majesty in right of Canada. The following agency corporations are listed in Schedule $\mathbf{C}$ to the Financial Administration Act or have been subsequently added to that Schedule by the Governor in Council:-

Atomic Energy of Canada Limited Canadian Arsenals Limited<br>Canadian Commercial Corporation<br>Canadian National (West Indies) Steamships Limited<br>Cansdian Patents and Development Limited<br>Centennial Commission<br>Crown Assets Disposal Corporation<br>Defence Construction (1951) Limited<br>National Battlefields Commission<br>National Capital Commission (formerly Federal District Commission)<br>National Harbours Board<br>Northern Canada Power Commission (formerly Northwest Territories Power Commission)<br>Park Steamship Company Limited.

Two corporations, Canadian Sugar Stabilization Corporation Limited and Commodity Prices Stabilization Corporation Limited, listed in Schedule C when the Financial Administration Act was proclaimed, have since discontinued operations and surrendered their charters. By an Order in Council of June 15, 1955, the name of the Northwest Territories Power Commission (now Northern Canada Power Commission) was deleted from Schedule D and added to Schedule C, effective Apr. 1, 1954. Also, the Canadian National (West Indies) Steamships Limited and Park Steamship Company Limited are both virtually inoperative.

Proprietary Corporations.-A proprietary corporation is defined as a Crown corporation that (1) is responsible for the management of lending or financial operations, or for the management of commercial or industrial operations involving the production of or dealing in goods and the supplying of services to the public, and (2) is ordinarily required to conduct its operations without parliamentary appropriations. The following proprietary corporations are listed in Schedule D to the Act or have been subsequently added to that Schedule by the Governor in Council:-

Air Canada (formerly Trans-Canada Air Lines)
Canadian Broadcasting Corporation
Canadian Overseas Telecommunication Corporation
Central Mortgage and Housing Corporation
Eldorado Aviation Linited
Eldorado Mining and Refining Limited
Export Credits Insurance Corporation
Farm Credit Corporation (formerly Canadian Farm Loan Board)
National Railways, as defined in the Canadian National-Canadian Pacific Act, 1933
Northern Transportation Company Limited
Polymer Corporation Limited
St. Lawrence Seaway Authority
Seaway International Bridge Corporation Limited (formerly Cornwall International Bridge Company Limited), subsidiary to the St. Lawrence Seaway Authority.

Departmental corporations are governed by the provisions of the Financial Administration Act that are applicable to departments generally. Agency and proprietary corporations, however, are subject to the provisions of the Crown corporations Part of the Act although, if there is any inconsistency between the provisions of that Part and those of any other Act applicable to a corporation, the Act provides that the latter prevail. There is provision in the Part for the control and regulation of such matters as corporation budgets and bank accounts, the turning over to the Receiver General of surplus money, limited loans for working-capital purposes, the awarding of contracts and the establish-
ment of reserves, the keeping and auditing of accounts, and the preparation of financial statements and reports and their submission to Parliament through the appropriate Minister.

A further form of control is exercised by Parliament through the power to vote financial assistance. This may take different forms. For some corporations, capital may be provided by parliamentary grants, loans or advances that may subsequently be converted into capital stock or bonds; for others it may be by the issue of capital stock to be subscribed and paid for by the Government; or by the sale of bonds to either the Government or the public. A few corporations have financed all or a portion of their requirements from their own resources or earnings.

Prior to 1952, Crown corporations did not pay corporate income taxes. However, the Income Tax Act was later amended so that, in respect of financial years commencing after Jan. 1, 1952, proprietary Crown corporations pay taxes on income earned in the same manner as any privately owned corporation. One desirable result of this amendment is that the financial statements of these Crown companies are now more comparable with those of private industry, with which in some instances they are in competition, and thus it is easier to assess the relative efficiency of their operations.

The functions of the various Crown corporations are given briefly in the following paragraphs. For a number of them, further details are included in the Chapters dealing with the subjects concerned (see Index).

Agricultural Stabilization Board.-The Board was established in 1958 (SC 1957-58, c. 22) to administer the provisions of the Agricultural Stabilization Act. The Board reports to Parliament through the Minister of Agriculture and routine administrative matters are handled through departmental channels.

Alr Canada.-Formerly Trans-Canada Air Lines, the Corporation was incorporated by Act of Parliament in 1937 to provide a publicly owned air transportation service, with powers to carry on its business throughout Canada and outside of Canada. Air Canuda now maintains passenger, mail and commodity traffe services over nation-wide routes and also services to the United States, England, Scotland, Ireland, France, Switzerland, West Germany, Austria, Bermuda, the Bahamas, Jamaica, Antigua, Barbados and Trinidad. Air Canada is responsible to Parliament through the Minister of Transport.

Atlantic Development Board.-The Act establishing this Board (SC 1962-63, c. 10) received Royal Assent on Dec. 20. 1962. The Board is composed of a chairman and four other members appointed by Order in Council and reports to Parliament through the Minister of Transport. Its functions are to inquire into and report upon measures and projects for fostering the economic growth and development of the Atlantic region of Canada and to assess and make recommendations with respect to particular projects referred to it by the Minister.

Atomic Energy Control Roard.-By Act of Parliament (RSC 1952, c. 11) proclaimed October 1946, the regulation and control of atomic energy in Canada was placed under the Atomic Energy Control Board. The Board reports to Parliament through the Minister of Energy, Mines and Resources.

[^50]The Canada Council.-Established by Order in Council dated Apr. 15, 1957 this corporation, composed of a chairman, a vice chairman and 19 other members, a director and an associate director. operates under the terms of the Canada Council Act, assented to Mar. 28, 1957. The function of the Council is to encourage the arts, humanities and social sciences in Canada. Its work is financed mainly by two funds, originally of $\$ 50,000,000$ each, set up by Parliament when the Council was created: the University Capital Grants Fund, now nearly depleted, and the Endowment Fund, of which only the income may be used. In addition, the Canadian Parliament, on Apr. 3, 1965, approved a special appropriation of $\$ 10,000,000$ to enable the Council to meet its minimum ioreseeable requirements during the next few years in the furtherance of the general purposes set out in Sect. 8 of the Act. In the making, managing and disposing of investments under the Act, the Council has the advice of an Investment Committee of five, including the chairman and another member of the Council. The proceedings of the Council are reported each year to Parliament through the Secretary of State. (See footnote, p. 142.)

Canadian Arsenals Limited.-This company was established under the Companies Act by Letters Patent dated Sept. 20, 1945 and is subject to the Government Companies Operation Act (RSC 1952, c. 133) and certain provisions of the Financial Administration Act (RSC 1952, c. 116). The company was set up to take over and operate Crown-owned plants and equipment. It manufactures small arms and a wide variety of ammunition and components and has extensive facilities for the filling and assembly of artillery, ammunition, mines, bombs, grenades, rockets and other specialties up to torpedo warheads. Its. Divisions, together with the locations of their plants, are as iollows: Dominion Arsenal Division (Quebec City and Val Rose, Que.); Small Arms Division (Long Branch, Ont.); Filling Division (St. Paul l'Esmite, Que.). The company reports to Parliament through the Minister of Defence Production.

Canadian Broadcasting Corporation.-The CBC functions under the Broadcasting Act, 1958, which continues the Corporation as a Crown agency charged with the operation of a national broadcasting service. It has the authority to maintain and operate broadcasting stations and networks and to originate and secure programs from within and outside Canada. This national radio and television service is financed through annual grants from Parliament and revenues from commercial operations.

The Corporation consists of $\mathbf{1 1}$ directors appointed by the Governor in Council and chosen to give representation to the principal geographical divisions of the country. The Secretary of State acts as spokesman for the Corporation in the Cabinet and the House of Commons. The President and Vice President are full-time executives appointed for a period of seven years; the other nine Directors are appointed for periods of three years and may serve two consecutive terms. The President is the chief executive of the Corporation and, with the Vice President, is responsible for the conduct of the affairs of the corporation. As the chief executive, the President receives, interprets and applies the policies and directives of the Directors of the Corporation and establishes administrative and operating policies to control the activities of all operating units-English Networks. French Networks, Regional Broadcasting and the International Service-and of corporate staff departments-Programming, Planning, Engineering and Finance.

In practice, attention of the President is directed primarity to the broad fields of corporate policy, long-range planning and financing. He reports on activities to the Directors of the Corporation and the conduct of relations with Parliament, the Board of Broadcast Governors and the public. The Vice President assists the President in his role of chief executive by assuming primary responsibility for the current operations of the Corporation.

The Corporation's Head Office is situated in Ottawa. Headquarters for English Networks is located in Toronto and for French Networks in Montreal and Regional Headquarters are situated in St. John's for Newfoundland, Halifax for the Maritime Provinces, Winnipeg for the Prairie Provinces, and Vancouver for British Columbia. Headquarters for the Northern and Armed Forces Services is in Ottawa and that for the International Service is in Montreal.

Canadian Commercial Corporation.-This Corporation was established on May 1, 1946 by the Canadian Commercial Corporation Act (RSC 1952. c. 35). Its principal purpose is to assist in the development of trade between Canada and other nations by acting on behalf of the Canadian Government as the contracting agency when other countries wish to purchase defence or other supplies and services from Canada on a government-to-government basis. The Corporation may enter into transactions under the provisions of the Act for any department or agency of the Government of Canada.

The Corporation is operated by the Department of Defence Production with staff provided by the Department and reports to Parliament through the Minister of Defence Production.

Canadian Corporation for the 1967 World Exhibition.-This Corporation was established by Act of Parliament (SC 1962-63, c. 12) to plan, organize, hold and administer the Canadian Universal and International Exhibition, Montreal 1967, to be held on the occasion of the Centenary of Canadian Confederation. The Exhibition is one of the First Category, and Canada is the first country in the Americas to hold such an exhibition under a franchise of the International Bureau of Exhibitions.

The Exhibition, known as EXPO 67, will be held in Montreal Apr. 28 to Oct. 27, 1967, on a site prepared by the City in three main areas grouped around historic St. Helen's Island in the
middle of the St Lawrence River. The theme, "Man and His World", is purported to demonstrate how, through the ages, man has met the challenge of his environment.

The Corporation is headed by a commissioner general and president; a deputy commissioner general and vice president; and a general manager. It reports to Parliament through the Minister of Trade and Commerce. The present address of the Corporation is Place Ville-Marie, Montreal; the telephone number is EXPosition 1967; and the cable address is Montexpo.

Canadian Government Participation, 1967 Exhibition.-This temporary government organization was set up officially on Oct. 24, 1963, following some months of study and preparatory work. It is not a Crown company but is nevertheless independent of Federal Government departments. The Commissioner General has the status of a Deputy Head and reports directly to the Minister of Trade and Commerce. He is entrusted with the planning, construction and operation of buildings and exhibits that will depict Canada, Canadians and Canadian achievements for better comprehension by visitors from all parts of the world to the International Exhibition, EXPO 67, to be held in Montreal Apr. 28 to Oct. 27, 1967.

Canadian Maritime Commission.-This Commission was created in 1947 by the Canadian Maritime Commission Act (RSC 1952, c. 38). It considers and recommends policies and measures necessary for the operation, maintenance, manning and development of a merchant marine and a shipbuilding and ship-repairing industry. The Commission administers the Canadian Vessel Construction Assistance Act (RSC 1952, c. 43) and the steamship subsidies voted by Parliament. Other functions include consultation with the Department of National Revenue in the administration of the laws relating to the coasting trade of Canada and the co-ordination of the overseas movement of men and material for the Department of National Defence. It has responsibility in international matters relating to merchant shipping, such as NATO, IMCO and other international bodies. The Chairman has the status of a Deputy Minister and the Commission reports to Parliament through the Minister of Transport.

Canadian National Rallways.-The Canadian National Railway Company was incorporated (SC 1919, c. 13) to operate and manage a national system of railways, including the Canadian Northern Railway System, the Canadian Government Railways and ali lines entrusted to it by Order in Council. In 1923 the Grand Trunk Railway Company of Canada was amalgamated with the Canadian National Railway Company and since 1923 a number of railway lines acquired by the Government have been entrusted to the Company for operation and management, including the Newfoundland Railway and steamship services in 1949, the Temiscouata Railway in 1950, and the Hudson Bay Railway and the Northwest Communication System in 1958. The Canadian National Railways Act, 1919 was repealed in 1955 and the Canadian National Railways Act (SC 1955, c. 29) substituted therefor.

The Canadian National Railway Company is controlled by a chairman and board of directors appointed by the Governor in Council, who report to Parliament through the Minister of Transport.

Canadian Overseas Telecommunication Corporation.-This Crown company was created on Dec. 10, 1949 by Act of Parliament (RSC 1952, c. 42) to acquire for public operation external telecommunication assets in Canada, in keeping with the Commonwealth Telegraph Agreement signed May 11, 1948. This Agreement was designed to bring about the consolidation and strengthening of the radio and cable communication systems of the Commonwealth. The Corporation is responsible to Parliament through the Minister of Transport.

Canadian Patents and Development Limited.-Canadian Patents and Development Limited is a Crown corporation set up in 1947, pursuant to authority granted in an amendment to the Research Council Act passed in 1946. The primary purpose of the company, which is a subsidiary of the National Research Council, is to make available to industry, through licensing arrangements, commercial inventions originating in the NRC laboratories. The company also handles inventions referred to it from the research establishments of Federal Government departments and agencies, Canadian universities, and provincial research councils. Any profits that the company may derive from licensing arrangements are used for further research and development. The company's Board of Directors is composed of representatives of the National Research Council of Canada, government departments and agencies, industry and the universities. The company reports to Parliament through the Minister of Industry in his capacity as Chairman of the Committee of the Privy Council on Scientific and Industrial Research.

Canadian Wheat Board.-The Board was incorporated in 1935 under the Canadian Wheat Board Act to market, in an orderly manner, in the interprovincial and export trade, grain grown in Canada. Its powers include authority to buy, take delivery of, store, transfer, sell, ship or otherwise dispose of grain. Except as directed by the Governor in Council, the Board was not originally authorized to buy grain other than wheat but, since Aug. 1, 1949, it may also buy oats and barley if authorized to do so by Regulation approved by the Governor in Council. Only grain produced in the designated area, which includes Manitoba, Saskatchewan, Alberta and parts of British Columbia and Ontario, is purchased by the Board, which controls the delivery of grain into elevators and railway cars in that area as well as the interprovincial movement and export of wheat, oats and barley generally. The Board is governed by its own Act of incorporation (see footnote, p. 142). It reports to Parliament through the Minister of Trade and Commerce.

Centennial Commission.-The Centennial Commission is a Crown corporation established by Parliament (SC 1960-61, c. 60 as amended) and responsible for the co-ordination and administration of projects relating to the Centennial of Confederation in Canada. It consists of a commissioner, an associate commissioner and not more than 12 directors, each of whom is appointed by the Governor in Council. The Commission is responsible to Parliament through the Secretary of State.

Central Mortgage and Housing Corporation.-This Corporation was incorporated by Act of Parliament (RSC 1952, c. 46) in December 1945 to administer the National Housing Acts. Under the National Housing Act, 1954 (SC 1953-54, c. 23, as amended), the Corporation insures mortgage loans made by approved lenders and makes direct loans for new home-ownership, rental housing and existing housing in urban renewal areas; guarantees home improvement loans made by banks; undertakes subsidized rental housing projects and land assembly developments under federal-provincial arrangements; offers loans and subsidies for public housing projects; makes loans for land assembly projects to be used for public housing; makes loans to limited-dividend and non-profit housing companies for low-rental housing projects; makes loans for university housing projects and to provinces and municipalities for sewage treatment projects designed to eliminate water and soil pollution; makes contributions and loans to provinces and municipalities for urban renewal operations; conducts housing research; encourages urban planning and owns and manages rental housing units including those built for war workers and veterans. The Corporation arranges for and supervises construction of housing projects on behalf of the Department of National Defence and other government departments and agencies. The Corporation is responsible to Parliament through the Minister of Labour.

Company of Young Canadians.-The Act establishing this corporation (SC 1966, c. 36) was assented to on July 11, 1966. The corporation consists of a Council of the Company and persons who are volunteer-members. The Council has 15 members, 10 of whom are elected by the volunteermembers and five of whom are appointed by the Governor in Council. Term of office for both elected and appointed members is three years. The Act provides for the establishment of an Interim Council of not more than 20 members to hold office until the members of the Council are elected or appointed. The objects of the Company are to support, encourage and develop programs for social, economic and community development in Canada or abroad through voluntary service. The corporation reports to Parliament through the Prime Minister.

Crown Assets Disposal Corporation.-This Corporation is established under the Surplus Crown Assets Act (RSC 1952, c. 260) and is subject to the Financial Administration Act (RSC 1952, c. 116). In June 1944, War Assets Corporation was established by statute to replace War Assets Corporation Limited which had been incorporated in 1943. In 1949 the name of War Assets Corporation was changed to Crown Assets Disposal Corporation. The Corporation's function is to dispose of surplus Crown assets. It is responsible to Parliament through the Minister of Defence Production.

Defence Construction(1951) Limited.-Defence Construction Limited began its operations in November 1950 as a Crown agency responsible for awarding and supervising defence construction projects. On July 12, 1951, under authority of the Defence Production Act, the present company was established under the name of Defence Construction (1951) Limited and took over the responsibilities of the former agency. From inception until Apr. 1, 1951 the company reported to the Minister of Trade and Commerce, from which date it reported to the Minister of Defence Production until the Minister of Industry was given the powers of the Minister of Defence Production on July 22, 1963. On Apr. 22, 1965, the control and supervision of the company was transferred to the Minister of National Defence.

The company's prime responsibility is the construction of defence projects, including the calling and review of all tenders and subsequent contract awards, the supervision of actual construction work in the field, and the administration of all projects from the Ottawa Head Office. More specifically, however, the company's operations cover five distinct spheres: defence projects in Canada for the Department of National Defence; all defence projects in Europe for the Department of National Defence under the North Atlantic Treaty Organization agreement; maintenance and repair contracts at Department of National Defence sites throughout Canada; defence construction for the U.S. Government in Canada; and advice and assistance in construction aspects of certain projects such as the Canadian Corporation for the 1967 World Exhibition.

Director of Soldier Settlement and Director of the Veterans' Land Act.-The Director of Soldier Settlement (under the Act of 1919) is also the Director of the Veterans' Land Act, and in each capacity is legally a corporation sole. For administrative purposes, however, the programs carried on under both Acts constitute integral parts of the services provided by the Department of Veterans Affairs.

Dominion Coal Board.-The Board, established as a department in 1947 by the Dominion Coal Board Act (RSC 1952, c. 86), has the responsibility of studying and recommending to the Government policies concerning the production, import, distribution and use of coal. The Chairman has the status of a Deputy Minister and the Board reports to Parliament through the Minister
of Energy. Mines and Resources. The Board administers transportation and other subventions relating to coal and also administers loans authorized under the Coal Production Assistance Act (RSC 1952, c. 173, as amended).

Eastern Roekies Forest Conservation Board.-The Board was appointed in 1947 under the Eastern Rocky Mountain Forest Conservation Act which authorized an agreement between the Government of Canada and the Province of Alberta relating to the protection and conservation of the forests of that portion of the eastern slope of the Rocky Mountains which gives rise to the major tributaries of the Saskatchewan River. Its function is to determine the policy necessary to obtain the greatest possible flow of water in the Saskatchewan River system. The planning of programs of forest use and conservation is a joint duty of the Board and the provincial Forest Service; the administration of the conservation area is a function of the province. In April 1962, a Technical Coordinating Committee for Watershed Research was established to undertake study of the related needs defined by the Board. The Committee's programs, undertaken by seven co-operating agencies of the Federal and Alberta Governments, are co-ordinated by an officer of the federal Department of Forestry and Rural Development.

Funds for capital expenditures during the first seven years of the agreement were provided by the Federal Government with maintenance expenditures being paid by the Province of Alberta. In 1955 the province undertook the responsibility of financing both capital improvements and maintenance work. Currently, one member of the three-man Board is appointed by the Federal Government and the province has the right to appoint two members. The choice of one of the three members as Board chairman is vested in the province. The Board reports to Parliament through the Minister of Forestry and Rural Development. (See footnote, p. 142.)

Economic Council of Canada. - This corporation, established under legislation passed on Aug. 2, 1963 (SC 1963, c. 11), consists of a full-time chairman and two full-time directors appointed for a term not to exceed seven years and not more than 25 additional members to serve part-time and without remuneration. The Council is to be as representative as possible of labour, agriculture and primary industries, secondary industry and commerce, and the general public. Its functions are to advise and recommend measures that will achieve in Canada the highest possible levels of employment and efficient production so that the country may enjoy a high and consistent rate of economic growth and that all Canadians may share in rising living standards; to carry on the duties of the former National Productivity Council which were to promote and expedite continuing improvement in productive efficiency in the various aspects of Canadian economic activity; and to publish an annual review of medium- and long-term economic prospects and problems. The Council reports to Parliament through the Prime Minister.

Eldorado Aviation Limited.-This company was incorporated Apr. 23, 1953 to carry air traffe, both passenger and freight, for Eldorado Mining and Refining Limited and its wholly owned subsidiary, Northern Transportation Company Limited. It reports to Parliament through the Minister of Energy, Mines and Resources.

Eldorado Mining and Refining Limited.--Set up in 1944 under the name of Eldorado Mining and Refining (1944) Limited (the date was omitted from the name in June 1952), the company's business is the mining and refining of uranjum and the production of nuclear fuels in Canada. The company has also entered into contracts for the purchase of uranium concentrates from private producers in Canada. It reports to Parliament through the Minister of Energy, Mines and Resources.

Export Credits Insurance Corporathon.-This Corporation commenced operations in 1945 under the Export Credits Insurance Act, 1944 (RSC 1952, ©. 105, as amended) and is administered by a Board of Directors (including the Deputy Minister of Trade and Commerce and the Deputy Minister of Finance) with the advice of an Advisory Council. Its function is to insure Canadian exporters against non-payment by foreign buyers arising out of eredit and political risks involved in foreign trade. The Corporation is also authorized to provide finaneing in respect of an export transaction involving extended credit terms. It reports to Parliament through the Minister of Trade and Commerce.

Farm Credit Corporation.-This Corporation was established on Oct. 5, 1959 (SC 1959, c. 43) for the purpose of providing for the extension of long-term mortgage credit to farmers. The Corporation also administers the Farm Machinery Syndicate Credit Act and is responsible to Parliament through the Minister of Agriculture.

Fisheries Prices Support Board.-The Board was set up in July 1947 (RSC 1952, c. 120) to recommend to the Government price support measures when severe price declines occur. The Board functions under the direction of the Minister of Fisheries and consists of a chairman, who is a senior officer of the Department of Fisheries, and five members chosen from private and cooperative firms in the industry. The Board has authority to buy fishery products and to sell or otherwise dispose of them or to pay producers the difference between a price prescribed by the Board and the average price the product actually commands.

Industrial Development Bank.-The Bank, a subsidiary of the Bank of Canada, was incorporated in 1944 to provide loans to industrial enterprises where financing is not available through recognized lending organizations. (See footnote, p. 142.)

Medical Research Council.-Established in November 1960, this Council operates as a virtually autonomous unit within the administrative framework of the National Research Council. It is composed of a chairman, a secretary and 15 members who serve for a three-year term, renewable once. The primary aim of the Council is the development of medical research and the support of medical researeb workers in the university centres of Canada. It reports to Parliament through the Minister of Industry in his capacity as Chairman of the Committee of the Privy Council on Scientific and Industrial Researeh.

Municipal Development and Laan Board.-The Act establishing this Board (SC 1963, c. 13) received Royal Assent on Aug. 2, 1963. The Board comprises a chairman and four other members, all senior officials of government, appointed by the Governor in Council, and reports to Parliament through the Minister of Finance. The Board was set up to make loans, up to a total amount of $\$ 00,000,000$, to municipalities to assist in the construction of additional municipal capital projects, thereby providing increased employment during the period 1963-66. By Mar. 31, 1966, the last date on which a loan could be approved, almost the entire fund had been committed, although actual loan payments continued to be made subsequent to that date as projects were completed.

National Arts Centre Corporation.-The Act establishing this Corporation (SC 1966, c. 48) was assented to July 15, 1966. The Corporation consists of a Board of Trustees composed of a chairman, a vice-chairman, the Mayors of Ottawa and Hull, the Director of the Canada Council, the President of the Canadian Broadcasting Corporation, the Government Film Commissioner and aine other members appointed by the Governor in Council for terms not exceeding three years, except for the first appointees whose terms range from two to four years. The objects of the Corporation are to operate and maintain the National Arts Centre, to develop the performing arts in the National Capital Region and to assist the Canada Council in the development of the performing arts elsewhere in Canada. The Corporation reports to Parliament through the Secretary of State.

National Battlefields Commission.-This Commission was established by Act of Parliament in 1908 to preserve the Historic Battlefields at Quebee City. The Commission is composed of nine members, seven appointed by the Federal Government and one each by the Provinces of Ontario and Quebec. The Commission is supported by annual appropriations of the Federal Government and is responsible to Parliament through the Minister of Indian Affairs and Northern Development.

National Capital Commission.-This Commission is a Crown ageney created by the National Capital Act (SC 1958, c. 37), proclaimed Feb. 6, 1959. It is the lineal descendant of the Federal District Commission. The Commission is served by a futl-time paid chairman and comprises a total of 20 members representative of the ten provinces of Canada. Its work force fluctuates between 600 and 850 , depending on the season.

Co-ordination and development of public lands in the National Capital Region are undertaken by direct planning and construction by the Commission's staff; by co-operation with municipalities; by provision of planning aid or financial assistance in municipal projects; and by advising the Department of Public Works on the siting and appearance of all Federal Government buildings in the $1,800-\mathrm{sq}$. mile National Capital Region. The Commission reports to Parliament through the Minister of Public Works.

National Gallery of Canada.-The beginnings of the National Gallery of Canada are associated with the founding of the Royal Canadian Academy of Arts in 1880. The Marquis of Lorne, then Governor General, had recommended and assisted the founding of the Academy. One of the three tasks he assigned to that institution was the establishment of a National Gallery at the seat of government. By Act of Parliament in 1913, re-enacted in 1951, the National Gallery was placed under the management of a Board of Trustees appointed by the Governor General in Council and now operates under the National Gallery Act (RSC 1952, c. 186). It is responsible to Parliament through the Secretary of State.

The first charge of the National Gallery is the development, care and display of the national art collections. Its services to the public include a large reference library on the history of art and related subjeets; an Exhibition Extension Branch through which travelling exhibitions, lectures and the showing of art films, and guided tours of the Gallery at Ottawa are conducted; the production of art publications and reproductions; and a National Conservation Research Laboratory.

National Harbours Board.-The Board was established by Act of Parliament in 1936. It is responsible for the administration of port facilities at the harbours of St. John's, Ntld.; Halifax, N.S.; Saint John, N.B.; Chicoutimi, Quebec, Trois-Rivières and Montreal, Que.; Vancouver, B.C.; and Churchill, Man.; the Jacques Cartier and Champlain Bridges at Montreal, Que.; and the grain elevators at Prescott and Port Colborne, Ont. The Board reports to Parliament through the Minister of Transport.

National Research Councll of Canada.-This is an agency of the Canadian Government established in 1916 to promote scientific and industrial research. The Council operates science and engineering laboratories in Ottawa, Halifax and Saskatoon: gives direct financial support to research carried out in Canadian university and industrial laboratories; sponsors Associate Committees co-ordinating research on specific problems of national interest; and develops and main-
tains the nation's primary physical standards. Other activities include the provision of free technical information to manufacturing concerns; the publication of research journals; and representation of Canada in International Scientific Unions. Patentable inventions developed in the Council's laboratories are made available for manufacture through a subsidiary company, Canadian Patents and Development Limited (see p. 146). The National Research Council consists of a president, three vice presidents, and 17 members representing Canadian universities, industry and labour. The Council is incorporated under the Research Council Act (RSC 1952, c. 239, as amended), and reports to Parliament through the Minister of Industry in his capacity as Chairman of the Committee of the Privy Council on Scientific and Industrial Research.

Northern Canada Power Commission.-The Commission was established by Act of Parliament in 1948 (RSC 1952, c. 196) to provide power to points in the Northwest Territories where a need developed and where power could be supplied on a self-sustaining basis; the Act was amended in 1950 to give the Commission authority to provide similar services in the Yukon Territory. The name of the Commission (formerly the Northwest Territories Power Commission) was changed in 1956. It is composed of a chairman and two members appointed by the Governor in Council and reports to Parliament through the Minister of Indian Affairs and Northern Development.

The Commission operates three hydro-electric plants in the Northwest Territories (two on the Snare River near Yellowknife and one on the Taltson River near Fort Smith) and two hydro plants in the Yukon Territory (one on the Yukon River at Whitehorse and the other on the Mayo River near Mayo). Diesel-electric plants are operated at Fort Smith, Fort Simpson, Fort Resolution and Frobisher Bay, N.W.T., and at Field, B.C.; diesel-electric power and central heating plants at Inuvik and Frobisher Bay, N.W.T., and Moose Factory, Ont.; and water supply and sewerage systems at Inuvik and Moose Factory. The Commission also operates in the Northwest Territories, on behalf of the Department, diesel-electric plants at Fort McPherson and Aklavik, heating plants at Fort McPherson, Fort Simpson and Frobisher Bay, and domestic water supply and sewerage systems at Fort McPherson, Fort Simpson and Frobisher Bay.

Northern Transportation Company Limited.-This Company was incorporated in 1947 under the title of Northern Transportation Company (1947) Limited, the date being omitted from the name in 1952. Previously a Company chartered under an Alberta statute, it has been a wholly owned subsidiary of Eldorado Mining and Refining Limited since that Crown company was established and carries out the business of a common carrier in the Mackenzie River watershed and western Arctic. The Company is responsible to Parliament through the Minister of Indian Affairs and Northern Development.

Polymer Corporation Limited.-This Corporation was incorporated in 1942 by Letters Patent and is subject to the Government Companies Operation Act (RSC 1952, c.133) and the Financial Administration Act (RSC 1952, c. 116). Its head office and plant are located at Sarnia, Ont., where it produces synthetic rubbers, latices, resins and related products. Subsidiary operations for the production of butyl and specialty rubbers are located in Belgium and France, respectively, and an international marketing subsidiary is located in Switzerland. The Company reports to Parliament through the Minister of Defence Production.

Science Council of Canada.-The Act establishing the Science Council of Canada (SC 1966, c. 19) received assent on May 12, 1966. The Council is to consist of not more than 25 members each having a specialized interest in science or technology and four associate members chosen from among officers or employees of the Federal Government. Members hold office for not more than three years and associate members hold office during pleasure. All are appointed by the Governor in Council. The duties of the Science Council are to assess in a comprehensive manner Canada's scientific and technological resources, requirements and potentialities and to make recommendations thereon. The Council reports to Parliament through the Prime Minister.

St. Lawrence Seaway Authority.-The St. Lawrence Seaway Authority was established by Act of Parliament in 1951 (RSC 1952, c. 242) and came into force by proclamation on July 1, 1954. The Authority was incorporated for the purposes of constructing, maintaining and operating all such works as may be necessary to provide and maintain, either wholly in Canada or in conjunction with works undertaken by an appropriate authority in the United States, a deep waterway between the Port of Montreal and Lake Erie. The Crown corporation, Seaway International Bridge Corporation Limited, is subsidiary to the St. Lawrence Seaway Authority. The Authority is composed of a president, a vice president and a member, and reports to Parliament through the Minister of Transport.

Unemployment Insurance Commission.-The Commission was appointed on Sept. 24, 1940 under the provisions of the Unemployment Insurance Act, 1940 (RSC 1952, c. 273). It is composed of three commissioners appointed by the Governor in Council, of whom one is designated chief commissioner. One commissioner, other than the chief commissioner, is appointed aiter consultation with organizations representative of workers and the other after consultation with organizations representative of employers. The Chief Commissioner is appointed to hold office for a period of ten years and each of the other Commissioners to hold office for a period not exceeding ten years. The Commission is responsible to Parliament through the Minister of Labour.

## Section 4.-Acts Administered by Federal Departments*

## List of the Principal Acts of Parliament Administered by Departments of the Government of Canada

Nots,-Copies of individual Acts of Parliament may be obtained from the Queen's Printer, Ottawa, at pricea of from 10 cente to $\$ 1.50$ per copy, according to number of pages. Where duplications of certain Acts appear in the list, parts of these Acta are administered by the Departmenta given.


[^51]List of the Principal Acts of Parliament Administered by Departments of the Government of Canada-continued


List of the Principal Acts of Parliament Administered by Departments of the Government of Canada-continued


## List of the Principal Acts of Parliament Administered by Departments of the Government of Canada-continued



List of the Principal Acts of Parliament Administered by Departments of the Government of Canada-concluded


## PART IV-FEDERAL AND PROVINCIAL GOVERNMENT EMPLOYMENT

## Federal Government Employment

Most public service employment and related personnel functions have been the responsibility of the Civil Service Commission, an independent body responsible to Parliament; the Treasury Board has had the duty of approving rates of pay and conditions of employment. The Civil Service Commission was established in 1908 and the legislation under which it first operated was superseded by a new Act in 1918 and that in turn was replaced in 1962. The operations of the Commission under the 1962 legislation with respect to recruitment, promotion, position classification, salary determination, staff training and employee relations are described in the 1966 Year Book at pp. 143-144. However, at the time of writing (November 1966) there were before Parliament three Bills that would change this framework. The proposed legislation would:
reaffirm the (Public Service) Commission's guardianship of the merit system and provide for its extension to certain groups of employees previously exempt from the provisions of the Civil Service Act; permit further geographic decentralization of Commission operations and further delegation of its staffing authority for manpower needs of departments of government that are decentralizing their operations; establish the Treasury Board (see p. 141) as the central managerial authority for personnel policy (except for those aspects assigned to the Commission by law), ior classification and pay, and for conditions of employment; and introduce a system of collective bargaining (administered by a special staff relations board) for pay and conditions of employment based on a new simplified classification system.
If passed before the end of the year, this legislation will be described briefly in Part IV of Chapter XXVII.

Statistics of Federal Government Employment.*-The current monthly survey of Federal Government employment, started in 1952, covers all employees of the Government of Canada; employees in this sense exclude the Governor General and LieutenantGovernors, Ministers of the Crown and Members of Parliament, judges, persons under contract and members of the Armed Forces, but include Force members of the Royal Canadian Mounted Police. The survey is divided into two main categories: (1) departmental branches, services and corporations, and (2) agency and proprietary corporations and other agencies. Table 1 combines the two groups; Tables 2 to 5 cover employees in the first category and Table 6 covers employees in the second category.

- Prepared in the Governments Division, Financial Statistics Branch, Dominion Bureau of Statistics.


## 1.-Total Federal Government Employees, by Province, as at Mar. 31, 1965, and Payrolls for the Year Ended Mar. 31. 1965

| Item and Province or Territory | Departments | Departmentsl Corporations | Agency Corporations | Proprietary Corporations | Other Agencies | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. |
| EmployeesNewfoundland. | 3.691 | 212 |  | 8,811 | 12 | 10,586 |
| Prince Edward |  |  |  |  |  |  |
| Island <br> Nova Seotio | 1,209 12,869 | 50 387 | 339 | 914 8,068 | 48 | 2.173 18.711 |
| Nova Scotia.......... | 12,889 6,355 | 680 | 102 | 7,183 | 37 | 14,207 |
| Quebec. ........ | 29, 822 | 2,990 | 2,796 | 30,177 | 826 | 66, 605 |
| Ontario. | 82,603 | 7,413 | 4,573 | 33,550 | 1.092 | 129.231 |
| Manitoba..... | 9,450 | 627 399 | 54 45 | 13.526 4.145 | 583 48 | 24,240 |
| Saskatchewan. Alberta. | 6,050 12,121 | 559 | 45 50 | 4, $\mathbf{6 4 5}$ | 98 | 19,359 |
| British Columbia | 19,168 | 1,136 | 199 | 6,066 | 85 | 28,854 |
| Yukon and Northweat Territories. Abroad | 2,603 3,210 | ${ }_{15}^{7}$ | 2051 5 | $\begin{gathered} 251 \\ 8.695 \end{gathered}$ | - 8 | 2,840 11,933 |
| Totals, Employees. . . . . | 185,151 | 14,368 | 8,368 | 122,496 | 2,843 | 337,215 |
| Totals, Payrells...... | $\begin{aligned} & \$ 0000 \\ & 897,098 \end{aligned}$ | $\begin{aligned} & \$ 000 \\ & 76,535 \end{aligned}$ | $\begin{aligned} & \$ 0000 \\ & \mathbf{4 8 , 3 1 8} \end{aligned}$ | $\begin{aligned} & 8.000 \\ & 688,281 \end{aligned}$ | $\$ \mathbf{1 4 , 5 8 6}$ | $\begin{gathered} s^{\prime} 000 \\ 1,715,228 \end{gathered}$ |

${ }^{1}$ In addition, approximately 220 agency and proprietary corporation and other agency employees are included with those of other provinces.

Departmental Branches, Services and Corporations.-The salaries of employees in this group are paid from the Consolidated Revenue Fund. Definitions of classifications are as follows. "Salaried" employees include all persons paid on the basis of an annual salary rate with the exception of ships' officers who, though paid an annual salary rate, are subject to special treatment under the regulations made pertaining to the Financial Administration Act. The salaried staff are employed in departmental branches, services and corporations which are subject to regulation by the Treasury Board and for which the positions are outlined in the Estimates of Canada, or are established by means of supplementary Treasury Board Minutes. Thus, this category of employees includes persons subject to the provisions of the Civil Service Act plus salaried persons employed on the staffs of Cabinet Ministers and appointed by statute or by Order in Council, and also the salaried staffs of certain administrative branches of the Government that do not fall under the jurisdiction of the Civil Service Act.
"Prevailing Rate" employees are those who occupy continuing positions that are subject to prevailing rate regulations and are therefore paid on the basis of standard wage rates for similar work in the area in which the individual is employed. Regulations made under authority of the Financial Administration Act govern the third group entitled "Ships' Officers and Crews"

These three groups comprise what may be called the "regular" employees of the government service. "Casuals and Others" are principally persons employed on a noncontinuing basis.
2.-Employees in Departmental Branches, Services and Corporations of the Federal Government, by Province and Sex, as at Mar. 31, 1965

${ }^{1}$ In certain provinces totals include employees undistributed as to sex.

## 3.--Employees in Departmental Branches, Services and Corporations and Payrolls by Month, April 1964 to March 1965

Nore, - Excludea agency and proprietary corporations and other agencies, figures for which are given in Table 6.

| Month | Salaried | Prevailing Rate | Sbips' Officers and Crews | Total | Casuals and Others |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Employees at End of Esce Month |  |  |  |  |
|  |  |  |  |  | No. |
| April 1964... | 165,251 | 21,868 | 3,397 | 100,514 | 12,368 |
| May....... | 184,988 | 22.588 | 3,519 | 191,035 | 13,832 |
| June.. | 164,170 | 23,874 | 3,562 | 191,606 | 15,043 |
| Augi... | 164,436 164,588 | 24,726 23,812 | 3,547 | 192,709 | 16,594 16,088 |
| September | 163,490 | 21,856 | 3,520 | 191,948 | 16,088 14.193 |
| October... | 164,536 | 21,402 | 3,728 | 189,661 | 13,168 |
| November | 165, 150 | 21,294 | 3,673 | 190, 117 | 13,270 |
| December | 164,378 | 21,206 | 3,524 | 189, 108 | 13,025 |
| January 1965 | 164,993 | 20.881 | 3.442 | 189,316 | 13,642 |
| February.. | 164,735 | 20,677 20,653 | 3,427 3,464 | 188,839 188,671 | 13,868 14,848 |
|  | Rrgutar Paymolis |  |  |  |  |
|  | 8'000 | \$ 000 | \$ 000 | \$000 | \$000 |
| April 1904. . | 65,334 | 6.742 | 1,444 | 73,520 | 3,365 |
| May... | 85,294 | 6.877 | 1,180 | 73,350 | 3,628 |
| June. | 65,064 | 7,287 | 1.218 | 73,570 | 4,216 |
| Augrat. | 65,448 | 7,338 | 1,283 | 74,019 | 4,562 |
| September | 66.571 | 6,870 | 1,209 | 74,651 | 4,203 |
| October. | 66,665 | 6,841 | 1,267 | 74,773 | 3,910 |
| November | 66,882 | 6,504 | 1,254 | 74,641 | 3,560 |
| December. | 66,550 | 6,968 | $1+221$ | 74,739 | 3.738 |
| January 1965. | 67, 176 | 6,552 | 1,174 | 74,902 | 3,518 |
| February... | 67,025 | 8,209 | 1,176 | 74,411 | 3,520 |
| March. . | 67,297 | 6,889 | 1,428 | 75,614 | 4,215 |
|  | Overtme Paymenta Reported |  |  |  |  |
|  | $\$^{\prime} 000$ | $8 \cdot 000$ | \$ 000 | \$ 000 | \$000 |
| April 1984. | 1,663 | 259 | 239 | 2,161 | 20 |
| May....... | 527 | 226 | 125 | 878 | 57 |
| June. | 761 | 295 | 137 | 1,193 | 77 |
| July.. | 617 | 299 | 143 | 1,059 | 122 |
| August.... | 584 | 321 | 148 | 1,058 | 13.1 |
| Oeptember. | ${ }_{932}$ | 245 270 | 204 | 1,405 | ${ }^{12}$ |
| November. | 764 | 281 | 224 | 1,269 | 59 |
| December. | 1,488 | 288 | 158 | 1,935 | 37 |
| January 1965. <br> February. <br> March | -993 | 346 | 109 | 1, 448 | 32 |
|  | 1,659 | 275 266 | 94 129 | 2,027 824 | ${ }_{36}^{30}$ |
|  | Retronctive Payments Reporied |  |  |  |  |
|  | \$'000 | \$'000 | \$ 000 | \$'060 | \$'000 |
| April 1964. | 192 | 14 | 281 | 487 | 29 |
| Msy....... | 3 | 20 | ${ }_{2}^{6}$ | 29 30 | 17 |
| June. | 7 | 20 | 2 | 30 61 | 2 |
| July........ | 13 | $\stackrel{21}{6}$ | $\stackrel{1}{1}$ | $\stackrel{61}{7}$ | ${ }_{2}$ |
| Angust.... | 9,6051 | 38 | 2 | 9,645 | 110 |
| October.... | 1 | 20 | ${ }^{4}$ | 26 | 11 |
| November. | ${ }_{166}^{4}$ | 29 52 | 28 1 | 219 | 18 |
| January 1965. |  | 76 | 1 | 77 | 9 |
| February.... |  | 19 | 32 | 51 | ${ }_{17}$ |
| March.. | 3 | 51 | 33 | 87 | 17 |

${ }^{2}$ Includes some paymente retroactive to Oct. 1, 1963 and others to Jan. 1, 1964.
Table 4 presents metropolitan area data on staff employed in departmental branches, services and corporations. The 17 metropolitan areas listed are those defined for purposes
of the 1961 Census of population, with subsequent amendments (annexations, etc.) considered. Included are employees who work within the boundaries of the metropolitan areas; employees residing within those areas but working outaide are excluded.
4.-Federal Employees in Metropolitan Areas with Totals for Non-metropolitan Areas, by Sex, as at Sept. 36, 1965 and Payrolts for September 1965

| Area | Persons Employed as at Sept. 30, 1965 |  |  |  |  | Regular Payrolla September 1965 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Male | Female | Undis. tributed | Total | P.C. of Grand Total | Total | P.C. of Grand Total |
|  | No. | No. | No. | No. |  | \$ ${ }^{\prime} 000$ |  |
| Metropolitan Areas | 38,872 | 41,728 | 140 | 144,309 | 66.5 | 58,695 | 68.4 |
| Ottawa, Ont.-Hull, Que | 31,941 | 18,329 | 3 | 50,273 | 23.8 | 23,259 | 27.1 |
| Montreal, Que., | 15,439 | 4,551 | - | 19.990 | 9.6 | 7,748 | 9.0 |
| Toronto, Ont. | 11,803 | 4,878 | - | 16,681 | 7.9 | 6,430 | 7.5 |
| Halifax, N.S... | 7,634 | 1,860 | 66 | 9,500 | 4.5 | 3,655 | 4.3 |
| $V$ ancouver, B.C | 6,605 | 2,377 | 1 | 8,983 | 4.3 | 3,749 | 4.4 |
| Winnipeg. Man. | 4,631 | 1,958 | $\xrightarrow{-}$ | 6,589 | 3.1 | 2,650 | 3.1 |
| Edmonton, Alta | 3,582 | 1,627 | - | 5.209 | 2.5 | 2,062 | 2.4 |
| Victoris, B.C. | 4.907 | 1,138 | 2 | 5,145 | 2.4 | 2,132 | 2.5 |
| London, Ont. | 2, 623 | 1,276 | - | 3,899 | 1.8 | 1, 444 | 1.7 |
| Quebee, Que. | 2,729 | 933 | 1 | 3,663 | 1.7 | 1,404 | 1.6 |
| Calcary, Alta | 2,151 | 808 | 5 | 2,964 | 1.4 | 1,187 | 1.4 |
| St. Jobn's, Nfld. | 1,677 | 249 | 20 | 1,946 | 0.9 | 747 | 0.9 |
| Saint John, N.B. | 1,154 | 517 | - | 1,671 | 0.8 | 647 | 0.8 |
| Hamilton, Ont | 1,149 | 412 | - | 1,561 | 0.7 | 642 | 0.7 |
| Windsor, Ont. | 991 | 229 |  | 1,220 | 0.6 | 507 | 0.6 |
| Kitchener-Waterloo, Ont. | 529 | 133 | 2 | 664 | 0.3 | 283 | 0.3 |
| Sudbury, Ont. | 227 | 115 | - | 342 | 0.2 | 147 | 0.2 |
| Non-metropelitan Areas. | 35,664 | 12,015 | 3,102 | 70,777 | $33^{3} .5$ | 27,046 | 31.6 |
| In Canada. | 53,750 | 10,513 | 3,102 | 67,365 | 31.9 | 25,704 | 30.0 |
| Outaide Canads | 1,910 | 1,502 | - | 3,412 | 1.6 | 1,336 | 1.6 |
| Grand Totals | 154.583 | 58,343 | 8,202 | 211,077 | 100.4 | 85,735 | 104.0 |
| Proportion in- | p.e. | p.o. | p.c. | p.c. |  | p.c. |  |
| Metropolitan areas. | 84.0 | 77.5 | 3.1 | 68.5 | $\cdots$ | 68.1 | ** |
| Non-metropolitan areas, | 36.0 | 22.5 | 98.9 | 33.5 | ... | 31.6 | $\ldots$ |
| In Canads....... | 34.8 | 19.7 | 96.9 | 31.9 | ** | 30.0 | $\cdots$ |
| Outside Canada. | 1.2 | 2.8 | - | 1.6 | $\cdots$ | 1.6 | - + |

Table 5 presents statistics for departmental branches, services and corporations on the basis of a classification by function. The purpose of such classification is to supply a means of studying the operation of government without the complication that results from differences in administrative establishment. This analysis is useful in three ways. First, it permits a detailed study of employment by the Government of Canada according to the main purposes or functions and, since these functions are not subject to the periodic changes that alter the administrative structure of the Government, it is possible to develop a statistical series which, with minor exceptions, is consistent over an extended period of time. Secondly, since differences in administrative establishment are eliminated, it is possible to make meaningful comparisons between Federal Government expenditures on employment and similar expenditures by other levels of government. Thirdly an analysis of the relationship between expenditures on employment and total expenditures may be made with regard to each function.

This Section normally includes a table giving employee and payroll data classified by departmental branches, services and corporations as they were organized at the end of the latest fiscal year. Data as at the end of March 1964 are given in the 1966 Year Book at pp. 152-155. However, because of the extensive changes taking place in the organization of a number of departments during 1965-66, this classification is not included in the current edition; monthly figures on both the fuectional and departmental bases are available in DBS publication Federal Government Employment (Cat. No. 72-004).

Nore.-Excludes agency and proprietary corporations and other agencies, figures for which are given in bummary form in Table 6 .

| Function | Salaried |  | Prevailing, Rate |  | Shipg' Officers and Crews |  | Tutals |  | Casuals and Others |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Em. ployees | Regular <br> Payrolls | limpliyees | Regular <br> 1'indrils | Employees | Regular 1'syridls | Employees | Regular Payrolls | Imployees | Regular Payrolls |
|  | Nr. | $\%$ | No. | 5 | No. | 8 | No. | * | No. | \$ |
| Defence Services (ercl. Armed Forces). | 32.040 | 134,210,116 | 11,313 | 46,084,657 | 567 | 2,381.926 | 41,920 | 182,606,769 | 4,650 | 20,431,209 |
| Veterans Pensions and Other Bienefits...... | 10,889 | 47,686,355 | 1,983 | 5,425,462 | - | - | 12,884 | 58,111,817 | - | - |
| General Goyernment | 38,823 | 141,815,724 | 2,758 | 3,385,45\$ | 5 | 32,368 | 31,59* | 151,877,542 | 2,645 | 2,215,441 |
| Executive and administrative. | 25,548 | $126,894,169$ | 2,753 | 9,979+089 | 9 | 32,362 | 28,310 | 136, 905, 620 | 2,539 | 1,889,899 |
| Legislative........... | 1,121 | 4,490,115 | 5 | 6.367 | - | - | 1,126 | 1,505,482 | - 100 | 24,906 |
| Resesrch, planning and atatistics | 2,154 | 10,426,440 | ) | , | - | - | 2,154 | 10.426, 440 | 106 | 200,636 |
| Proteetlon of Persons and Preperty. | 13, 263 | 66, 328,909 | 111 | 374,282 | - | - | 12,374 | B5, 8\%4,190 | 17 | 88,198 |
| Law enforcement...................... | 231 | 1,431,281 | - | - | - | - | 231 | 1, +31.261 | - |  |
| Corrections.. | 3,018 | 14, 165.536 | 11 | 970 | - | - | 3,018 | 14,465, 536 | 10 | 40,023 |
| Police protection. | 8,766 | 43, 054, 674 | 111 | 370,282 | 二 | - | 8,877 1.248 | 43, 421,956 | - 3 | 46,175 |
| Other..... | 1,248 | 7,372,437 | - |  |  | - | 1,248 | 7,372,437 | 7 | 36,175 |
| Transportation and Commenneations. | 10,203 | 55, 002,185 | 1,445 | 7,380, 090 | 2,475 | 10, 443,041 | 14,273 | 73,625,316 | 1,182 | 6,917,418 |
| Airways................ ........... | 3,823 | 22,308,002 | 1,722 | 3,159,740 | 2,17 | 10, | 4,545 | 25,465,742 | 418 98 | 2,183,172 |
| Highways, roads and bridges | 454 | 2,350,176 | 347 | 2.421,082 | - | - | 8801 | 4,771,238 | 89 | 1,364, 852 |
| Railways................. | 163 | 1,193.098 | - 21 | - 105 | - | - | . 163 | 1,193,098 | 46 |  |
| Telephone, telegraph and wireless. | 2,599 | 13,941,570 | 21 | 82,105 |  | - | 2,620 | 14.023,765 | 46 | -343,948 |
| Waterways. | 2,678 | 12,896,247 | 355 | 1,717,093 | 2.475 | 10,643,041 | 5.508 | 25.256,381 | 619 | 3,055,648 |
| Other. | 586 | 2,915,092 | - | - | - | - | 586 | 2,915,092 | - | - |
| Health. | 3,437 | 17,290,374 | 502 | 1,015, 682 | - | - | 3,989 | 18,50\$,006 | 293 | 948,269 |
| General. . | 412 | 2,165,528 | 4 | 1,59,017 | - | - | 416 | 2.224 .545 | 4 | 25,343 |
| Public health | 878 | 5.088, 345 | 50 | 125,771 | - | - | \% 928 | 5, 194, 116 | ${ }_{28}^{4}$ | 58.631 |
| Hospital care. | 2,147 | 10,056, 45] | 448 | 830,894 | - | $\sim$ | 2,595 | 10,887,345 | 285 | 912,295 |
| Social Frelfare. | 11,327 | 52, 13, 941 | 13 | 48,801 | 5 | 21,429 | 11,345 | 52,684,171 | 2,033 | 3,352,731 |
| Aid to aged persons | + 31 | 194,35] | - | 2,801 | - | , | 31 | 194,351 | - | ${ }^{736}$ |
| Farnily allowances. | 722 | 2,700,600 | - | - | - | - | 722 | $2,700+600$ | 41 | 112,288 |
| Lsbour........ .... .................... | 449 | 2,448,445 | - | - | - | $\cdots$ | 448 | $2,448,445$ | 30 | 78,926 |
| National employment and unemployment insurance services | 9,061 | 41,714,124 | 4 | 12,249 | - 5 | $\because 42$ | 9.065 | 41,726,373 | 1,184 | 2,789, 374 |
| Other social weliare.................. . . . . . . . . . . . . . . | 1.064 | 5,556,421 | 9 | 36,552 | 5 | 21,429 | 1,078 | 5,614,402 | 778 | 371,467 |
| Recreation and Cultural Services. | 1,843 | 14,379,886 | \$25 | 4,368,440 | - | - | 2,768 | 15,148, 776 | 999 | 2,620,514 |
| Arcbives, art gallerieb, museums and libraries..... | 1.820 | 2,011,878 | 11 | 4, 42,921 | - | - | 431 | 2,054,799 | 30 | 88,056 |


|  | $\begin{gathered} 644 \\ 71 \\ 768 \end{gathered}$ | $\begin{aligned} & 3,323,495 \\ & 4,83,801,662 \end{aligned}$ | $\sim_{-}^{914}$ | 4，925，519 | 二 |  | $\begin{array}{r} 1,558 \\ 11 \\ 768 \end{array}$ | $\begin{aligned} & 8,249,014 \\ & 4,780,662 \\ & 4,781 \end{aligned}$ | 834 -135 | $2,191,508$ 349,950 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Education． | 1，586 | 9，118，253 | 21 | 42，724 | － | － | 1，007 | 9，150，977 | 474 |  |
| Indian and Eskimo sehools and schools in N．W．T． | 1，533 | $8,803,604$ | 21 | 42，724 |  |  | 1，554 | 8，846，328 | 474 | 341，081 |
| Universities，colleges and other schools．．．．．．．．．．． | 53 | 314，649 |  |  |  |  | 53 | 314，649 |  |  |
| Natural Resources and Frimary lndustrits． | 13，512 | 77，875，116 | 1，464 | 7，145，671 | 408 | 1，929，088 | 15，484 | 87，049，875 | 532 | 3，698，185 |
| Fish and game | 1，776 | $10.096,646$ | 25 | 241， 974 | 408 | 1，929，088 | 2，209 | 12，267，708 | 75 | 903，581 |
| Forests．．．o．t． | 7958 | 6，018，224 | 58 | ＋ 3371.965 |  |  | 1，048 | 6，356， 189 | 74 | 268，678 |
| Lands－settlement and | 7，958 | 43，623，754 | 1.004 | 4，580．037 |  | － | 8，962 | 48，209，791 | 156 | 1，075，949 |
| Minerals and mines | 1，236 | 8，783，347 | 66 | 333，924 |  |  | 1，302 | 9，117，271 | 39 | －327，287 |
| Water resources | 1,245 1,407 | $1,383,075$ $8,070,070$ | 3068 | ＋11，822 | 二 |  | ${ }^{250}$ | 1，394，897 | 9 | 41，797 |
| Trade and Industrial Development． | 1，725 | 9，640，30\％ | － | － | － | － | 1，725 | 3，640，387 | 119 | 507，05\％ |
| Public Service and Trading Enterprises． | 139 | C09，080 | － | － | － | － | 139 | 609，083 | 71 | 171，232 |
| Other | 37，567 | 171，522，304 | 105 | 440，917 | － | － | 37，672 | 171，963，221 | 1，830 | 5，85＊，910 |
| Civit defence．．． | 1226 | 1，370，937 | 32 | 88，627 | － | － | 258 | 1，459．564 | 18 | ， 704 |
| Immigration and citizenship． | 2，019 | 9，611， 991 | 28 | 82，124 | － | － | ${ }_{2}^{160}$ | 9，694， 9 | ${ }_{38}^{6}$ | 11，157 |
| External affairs．， | 2，308 | 10，907，325 |  |  |  |  | 2，303 | 10，907，325 | 250 | 302，141 |
| Buljion and coinage | ${ }^{3} 5222$ | 1， 4111,823 | 4 | 188348 |  |  |  | 1，411，823 |  | 30， |
| Post Office | 27,5461 4,991 | $116,936,9314$ $30,396,166$ | 24 21 | 168,348 103,820 | 二 |  | 27，570 | 117，097， 277 | $913{ }^{2}$ | 1，766，415\％ |
| Other | 4，091 | 30，396， 166 | 21 | 103，820 |  |  | 5，012 | 30，499，986 | 623 | 3，722，478： |
| Grand Totals | 164，554 ${ }^{\text {d }}$ | 794，581，4494｜ | 20，653 ${ }^{\text {a }}$ | 82，922，4116 | 5，464 | 15，017，916 ${ }^{\text {a }}$ | 188，671 | ｜892，531，776 | 14，848 ${ }^{5}$ | 47，236，794 |

${ }^{1}$ Ercludes 10,748 postmasters and an estimated 3,300 assistants paid $\$ 20,729,225$ from poatal revenues．
${ }^{2}$ Excludes 52,248 Christmas kelpers pajd $\$ 3,300,170$ ． ${ }^{2}$ Ercluces part－time weather observers paid $\$ 56,817$ ． Mines and Technical Surveys．Field parties on the East Coast are included above Ta rate employees and $\$ 15,446$ to casual employees are excluded trom the function detail but are included here．

Agency and Proprietary Corporations and Other Agencies,-The following are organizations owned by the Federal Government as at Mar. 31, 1965. Employees and earnings are shown by month in Table 6: a provincial distribution of employees and a summary of the total payroll in each of the three groups is given in Table 1, p. 156.

Agercy Corporations

Atomic Energy of Canada Limited Canadian Arsenals Limiced
Canadian Commercial Corporation
Canadian Patents and Development Limited*
Centennial Commission
Crown Assets Disposal Corporation

Defence Construction (1951) Limited
National Battlefield Commission National Capital Commiasion
National Harbours Board
Northern Cansda Power Commintion

## Proprietary Corporations

Air Canads
Canadian Broadcasting Corporation
Canadian National Railways
Canadian Overseas Telecommunication Corporation
Cebtral Mortgage and Housing Corporation
Eldorado Aviation Limited
Eldorado Mining and Refining Limited

Export Credite Insurance Corporation
Farm Credit Corporation
Northern Transportation Company Limited
Polymer Corporation Limited
St. Lawrence Seswry Authority
The Seaway International Bridge Corporation Limited

## Other Agencies

Atlantic Development Board
Bank of Cansda
Canadian Wheat Board

Industrial Development Bank
Canadian Corporation for the 1967 World Exhibition Office of the Custodian
6.-Employees and Earnings in Agency and Proprietary Corporations and Other Agencies by Month, Years Ended Mar. 31, 1944 and 1365

| Month | 1963-64 |  | 1968-65 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Employees | Earnings | Employees | Earning |
|  | No. | \$'000 | No. | \$000 |
| April. | 131,137 | 55.476 | 132,670 | 58, 185 |
| May., | 135,155 | 57,998 | 135.686 | 59,808 |
| June.. | 138,463 | 56,861 | 140.226 | 63, 427 |
| July.... | 141.611 | 63,180 | 143.717 | 64,629 |
| Aurast.... | 141.921 | 60,081 58.276 | 144,232 143,455 | 63,675 88.589 |
| October... | 135,991 | 59,669 | 138,281 | 62,906 |
| November. | 134.608 | 56,859 | ]36, 336 | 62.602 |
| December. | 132.020 | 60,179 | 135,800 | 63,839 |
| Janusry.... | 130.974 | 57, 218 | 133,842 | 81,740 |
| February. | 130,755 130,760 | 55,064 | 133,841 133,697 | 59,248 82,946 |
| March..... | 130,760 | 57.885 | 133,697 | 62,946 |

## Provincial Government Employment

Table 7 shows gross payrolls (including retroactive pay, salary, adjustments and overtime payments) of provincial government employees, exclusive of those for British Columbis, for the month of March 1966. Provincial government payrolls for the whole of the year ended Mar. 31, 1966 amounted to $\$ 1,210,255,000$, payrolls for departmental services employees amounted to $\$ 723,432,000$ and accounted for 59.8 p.c. of the total, those of institutions of higher education received $\$ 134,571,000$ or 11.1 p.c., those of provincial government enterprises $\$ 336,297,000$ or 27.8 p.c., and those of workmen's compensation boards $\$ 15,955,000$ or 1.3 p.c. of the total.

The only data available for British Columbia and included in the table are for employees of institutions of higher education.

[^52]
## 7．－Provincial Government Employment and Payrolls，for March 1966

| Province or Territory and Item | Departmental Services | Provincial Institutions of Higher Education | Provincial Government Enterprises | Workmen＇s Compensation Boards | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Newfoundland－ |  |  |  |  |  |
| Employees．．．．．．．．．．．．．．．．．．．．．No．．．．．．．．．．．．．．． | 8,260 $2,343,552$ | 329 163,968 | 121，172 | $\underset{17,821}{52}$ | 8,999 $2,646,513$ |
| Prince Edward Island－ Employees． Gross payrolls． $\qquad$ | 1,648 378,056 | 二 | 60 15,089 | 2，928 ${ }^{8}$ | 1,716 396,073 |
|  | $\begin{array}{r} 10,710 \\ 2,597,008 \end{array}$ | 二 | 1,444 487,646 | 73 28,690 | $\begin{array}{r} 12,227 \\ 3,113,344 \end{array}$ |
|  | 7,171 $2,332,299$ | $\begin{array}{r} 893 \\ 306,388 \end{array}$ | 2,309 891,885 | 60 24,433 | $\begin{array}{r} 10,433 \\ 2,555,005 \end{array}$ |
| Quebec－ <br> Employees．．．．．．．．．．．．．．．．．．．No． <br> Gross payrolls． $\qquad$ | $\begin{array}{r} 42,721 \\ 14,467,220 \end{array}$ | 二 | 14,256 $6,047,297$ | 1,195 368,698 | $\begin{array}{r} 58,272 \\ 20,883,215 \end{array}$ |
| Ontario－ <br> Employees． $\qquad$ | $\begin{array}{r} 55,814 \\ 23,192,778 \end{array}$ | $\begin{array}{r} 8,917 \\ 3,759,258 \end{array}$ | $\begin{array}{r} 19,470 \\ 10,237,688 \end{array}$ | 1,418 624,071 | $\begin{array}{r} 85,619 \\ 37,813,795 \end{array}$ |
|  | $\begin{array}{r} 8,847 \\ 3,265,039 \end{array}$ | $\begin{array}{r} 3,690 \\ 1,094,755 \end{array}$ | $\begin{array}{r} 6,787 \\ 3,144,975 \end{array}$ | 115 43,345 | $\begin{array}{r} 19,439 \\ 7,548,114 \end{array}$ |
|  | 9,595 $4,308,347$ | 3,881 $1,648,895$ | 6,656 $2,860,665$ | 113 49,870 | $\begin{array}{r} 20,245 \\ 8,867,777 \end{array}$ |
| Alberta－ <br> Employees． <br> Gross payrolls $\qquad$ | 17,956 $7,112,947$ | $\begin{array}{r} 7,768 \\ 2,766,159 \end{array}$ | $\begin{array}{r} 7,884 \\ 2,878,272 \end{array}$ | $\begin{array}{r} 438 \\ 180,232 \end{array}$ | $\begin{array}{r} 34,046 \\ 12,937,610 \end{array}$ |
|  | $\cdots$ | $\begin{array}{r} 5,584 \\ 2,161,172 \end{array}$ | ． | $\cdots$ | $\begin{array}{r} 5,584 \\ 2,161,172 \end{array}$ |
| Yukon and Northwest Territories－1 <br> Employees． <br> Gross payrolls | $\begin{array}{r} 537 \\ 253,430 \end{array}$ | 二 | $\begin{array}{r} 58 \\ 20,298 \end{array}$ | － | $\begin{array}{r} 595 \\ 273,728 \end{array}$ |
|  | $\begin{array}{r} 163,259 \\ 60,250,676 \end{array}$ | $\begin{array}{r} 31,062 \\ \mathbf{1 1 , 9 0 0 , 5 9 5} \end{array}$ | $\begin{array}{r} 59,382 \\ 26,704,987 \end{array}$ | $\begin{array}{r} 3,472 \\ 1,340,088 \end{array}$ | $\begin{array}{r} 257,175 \\ 100,196,346 \end{array}$ |

${ }^{1}$ Departmental services of the Northwest Territories are staffed by employees of the Government of Canada who are included in the statistics under＂Federal Government Employment＂．

## PART V－CANADA＇S EXTERNAL RELATIONS＊

Canada＇s Status in the Commonwealth．－The Imperial Conference held in London in 1926 marked a turning point in the history of the then British Empire and was an important step in the evolution from Empire to Commonwealth．At the 1926 Con－ ference the self－governing countries，consisting of Britain and the Dominions，were de－ scribed as being＂autonomous countries within the British Empire，equal in status，in no way subordinate one to another in any aspect of their domestic or external affairs，though united by a common allegiance to the Crown，and freely associated as members of the British Commonwealth of Nations＂The Governors General of the Dominions were recognized as having in all essential respects the same constitutional position as the Crown in Britain．It was also stated by the Conference that＂it is the right of the Government

[^53]of each Dominion to advise the Crown in all matters relating to its own afiairs" Subsequent to this important meeting, Canada's stature and status in the international community continued to grow. Following from the earlier (1923) Imperial Conference, Canada exercised the powers of treaty-making and had established its own diplomatic missions overseas. The Statute of Westminster in 1931 provided more explicit recognition of the principles of equality of status by removing the remaining limitations on the legislative autonomy of Commonwealth countries. As a further development of Canada's independent position, all legal cases started in Canada after Dec. 23, 1949 could no longer be appealed to the Privy Council in London and the Supreme Court of Canada became the final court of appeal for all Canadian legal cases.

Canada's International Status.-The growth of Canada's international status is reflected in the development of the Department of External Affairs. A review of the organization and development of that Department is given in the 1952-53 Year Book, pp. 101-104; a brief outline is given at pp. 132-133 of this volume.

The following Section 1 covers Canadian diplomatic representation abroad and representation of other countries in Canada. Section 2 deals with Canada's main international activities during 1965 and early 1966 with respect specifically to the Commonwealth, the United Nations, and the North Atlantic Treaty Organization. International economic aid programs and Canada's participation in the Organization for Economic Co-operation and Development are covered separately. Although these fields are considered to be the most significant for the purposes of this publication, it should be noted that Canada's activities in other areas are also of importance. The External Affairs Monthly Bulletin* covers all activities of the Department.

* Obtainable from the Queen's Printer, Ottaws, $\$ 2$ per year.


## Section 1.-Diplomatic Representation as at June 30, 1966

Nore.-Cbanges in this listing subsequent to June 30, 1966 and names of current representatives are given in Canadian Representatives, Abroad and Representatires of Otker Countries in Canada, published thrice yearly and obtainable from the Queen's Printer, Ottswa, price 60 cents per copy.

## 1.-Canadian Representation Abroad

| Country and Year <br> Representation Establisbed | Present Status of Representative | Address |
| :---: | :---: | :---: |
| Algeris....................... 1965 | *Ambassador | c/o Canadian Embassy, Proliterskih |
| Argentina.................... 1941 | Ambassador | Bartolomé Mitre 478, Buenos Aires |
| Australia..................... . 1938 | High Commissioner | Commonwealth Ave., Canberta |
| Austria. ................... . . . . 1952 | Ambassador. | 49-51 Obere Donaustrasse, Vienna |
| Belgium ...................... 1939 | Ambassador | 35, rue de la Science, Brussela |
| Bolivis....................... . 1961 | *Ambassado | e/o Candadian Embassy, Edificio El Pacifico Washington, 7 Piso, Plaza Washington Lima, Peru |
| Brazil....................... 1941 | Ambassador | Avenida Presidente Wilson 165, Rio de |
| Britsin...................... . . 1880 | High Commissioner. | Canada House, Trafalgar Square, London |
| Burms....................... . 1958 | *Ambassado | e/o Office of the High Commissioner for Canada, Ampang Rd., Kuala Lumpur, Malaytia |
| Cameroon.................... 1962 | Ambassador. | Immeuble Soppo Priso, rue Joseph Clerc, |
| Central African Republie ..... 1962 | *Ambassador | Immeuble Soppo Priso, rue Joseph Clerc, Yaounde, Cameroon |
| Ceylon....................... . . 1953 | High Commisgioner. | 6 Gregory's Road, Cinnsmon Gardens, Colombo |
| Chad......................... 1962 | *Ambassador. | Immeuble Soppo Priso, rue Joseph Clerc, Yaounde, Cameroon |
| Chile...................................... 1959 | Ambassador Ambassador | Agustinas 1225, Santiago Carrers 10, 16-92, Bogots |

* Dual accreditation; representative not resident in the country.


## 1.-Canadian Representation Abroad-continued

| Country and Year <br> Representstion Establighed | Present Status of Representative | Address |
| :---: | :---: | :---: |
| Congo (Brazzaville) . . . . . . . . 1962 | -Ambassador. | Immeuble Soppo Priso, rue Joseph Clerc. Yaounde, Cameroon |
| Congo (Leopoldville)......... 1962 | Ambassado | Building C.C.C.I., Boulevard du 30 juin, |
| Costa Rica................... 1961 | Ambassador | Edificio Banco Anglo Costarricense, Ave- |
| Cubs.......................... 1945 | Ambassador | 30, No. 518, Esquins a7s, Miramar, |
| Cyprus. ...................... 1961 | High Commissi | 15A Heroes St. Nicosia |
| Czechonlovakia................ 1943 | Ambassador. | Mickiewiczova 6, Prague 6 |
| Dahomey..................... 1862 | *Ambsssad | c/o Office of the High Commissioner for Cansda, New Barclays Bank Bldg., 40 Marina Dr., Lagos, Nigeria |
| Denmark.................... 1948 | Ambassador | Princesse Maries Allé 2. Copenhagen |
| Dominican Republic.......... 1954 | Ambassa | Edificio Copello, 79 Calle El Conde, Santo Domingo |
| Eruador....................... 1961 | Ambassador. | Edificio I.C.S.A. 120 Diagonal Seminario |
| El Salvador.................. 1962 | *Ambassador | c/o Canadian Embassy. Edificio Banco Anglo Costarricense, Avenids 2y Calle 3, |
| Ethiopis..................... 1986 | Ambassador, | c/o Cansdian Embassy, P.O. Box 1130, |
| Finland. . . . . . . . . . . . . . . . . . . 1949 | Ambassado | Pohjois Esplanaadikata 25B. Helsinki |
| France......................... 1928 | Ambsasad | 35 avenue Montaigne. Paris 8 |
| Gabon......................... 1962 | *Ambassado | Immeuble Soppo Priso, rue Joseph Clerc, Yaounde, Cameroon |
| Germany.................... 1950 | Arobassador | Zitelmannstrasse 22, Bonn |
| Gbans........................ 1957 | Higb Commis | E 115/3 Independence Ave., Acera |
| Greecs........................ 1943 | Ambasador | 31, avenue Vassilissis Sofias, Athens 138 |
| Gustemals................... 1961 | *Ambassador | 53 A venida 11-70 Zona I, Guatemala City |
| Guinea...................... . 1962 | *Ambassador | c/o Office of the High Commissioner for Canada, E 115/3 Independence Ave., Accra, Ghana |
| Guyara..................... 1964 | High Commissioner. | 91B Middle St., Georgetown |
| Heiti........................ 1954 | Ambassad | Route du Canapé Vert, St. Louis de Turgeav. |
| Honduras.................... 1961 | *Ambassador. | c/o Canadian Embassy, Edificio Banco Anglo Costarricense, Avenida $2 y$ Calle 3 , |
| Hungary...................... . 1965 | *Ambassador | c/o Canadian Erobassy, Mickiewiczova 6, |
| Iceisnd......................... . 1949 | *Ambassador | c/o Canadian Embassy, Fridtjot Nansens |
| India......................... 1947 | High Commiss | Plass 5, Oslo, Norway <br> 4 Aurangzeb Rd., New Delhi |
| Indonesia...................... 1953 | Ambassador | Djalan Budi Kemuliaan No. 6, Djakarta |
| Iran............................ 1958 | Ambassador | Bezrouke House, corner of Takhte Djamchid A ve, and Forsat St., Tebran |
| Iraq........................... . 1961 | -Ambassador | e/o Canadian Embassy, P.O. Box 1610, Tehran, Iran |
| Ireland....................... . 1940 | Ambasador | 10 Clyde Rd., Balls-Bridge, Dublin |
| Irrael.......................... 1953 | Ambassado | 84 Hahashmonaim St., Tel Aviv |
| Italy............................ 1947 | Ambassador | Via G.B. de Rossi 27, Rome |
| Ivory Coast................... 1962 | *Ambassador | c/o Office of the High Commissioner for Canada, $\mathbf{E}$ 115/3 Independence Ave., Accra, Ghans |
| Jamsica...................... 1962 | High Commi | 32 Duke St., Kingston |
| Jspan.......................... . 1929 | Ambassador | 16 Omote-Machi, 3-Chome, Akasaka Minatorku, Tokyo |
| Jordan......................... . 1965 | *Ambassador | c/o Canadian Embassy, Immerale Alpha, |
| Kenya........................ . 1965 | *Bigh Commissioner | rue Clemenceau, Beirut, Lebanon <br> c/o Office of the High Cormmissioner for Canada, Gailey and Roberta Bldg., Independence Ave., Dar-es-Salaam, United Republic of Tanzania |
| Korea.......................... 1964 | *Ambassador | c/o Canadian Embassy, 16 Omote-Machi, 3-Chome, Akasaka Minato-ku, Tokyo, Japan |
| Kuwait....................... 1965 | -Ambassador | c/o Canadian Embassy, Bezrouke House. corner of Takhte Djamchid Ave, and Forsat St., Tehran, Iran |
| Lebanon........................................ 19454 Laxembourg........... | Ambassador. <br> *Ambassador. | Immeuble Ajphs, rue Clemenceau, Beirut c/o Canadian Embassy, 35 rue de la Science, Brussels, Belgium |

[^54]
## 1.-Canadian Representation Abroad-continued

| Country and Year <br> Representation Established | Present Status of Representative | Address |
| :---: | :---: | :---: |
| Malsysis.................... . 1058 | High Commissioner. | ., |
| Malta.......................... 1964 | -Ambassado | Ampang Rd., Kuala Lumpur <br> e/o Canadian Embazsy, via G.B. de Rossi |
| Mexico.... . . . . . . . . . . . . . . . 1944 | Ambsssad | Melchor Ocampo ${ }^{\text {27, }}$ (63-7, Mexico 5, D.F. |
| Могоссо....................... . 1962 | *Ambas | c/o Canadian Embasgy, Edificio España, |
| Nepal....................... 1965 | *High Commisgioner. | Plazs de Espafía 2, Madrid, Spain <br> e/o Office of the High Commissioner for Canada, 4 Aurangzeb Rd., New Delhi, |
| Netherlands................. 18389 | Ambassador | 5 and 7 Sophialsan, The Hague |
| New Zealand................. . 1940 | High Commissioner | I.C.I. Building. Molesworth St., N.I., We!lington |
| Nicaragua. . . . . . . . . . . . . . . . 1961 | *Ambassador. | c/o Canadian Embassy, Edificio Benco Anglo Costsrticense, Avenida $2 y$ Caile 3 , San Jose, Costa Rica |
| Niger. . . . . . . . . . . . . . . . . . . . 1962 | *Ambassador | e/o Office of the High Commissioner for Canada, New Barclsys Bank Blde., 40 Marina Dr., Lagos, Nigeria |
| Nigeria........................ . 1960 | High Commissioner............ | New Barclays Bank Bldg., 40 Marina Dr., Lagos |
| Norway..................... 1943 | Ambassador. | Fridtiol Nansens Plass 5, Oslo |
| Pakistan . . . . . . . . . . . . . . . . . . 19.1950 | High Commis | 17A Harley St., Rawalpindi, Pakistan |
| Panama...... . . . . . . . . . . . . . . . 1961 | *Ambassador. | e/o Canadian Embassy, Edificio Baneo Anglo Costarricense, Avenida 2y Calle 3, San José, Costa Rica |
| Parmgury ................. . . . . 1962 | *Ambassador | c/o Canadian Embassy, Bartolomé Mitre 478, Buenos Aires, Argentina |
| Peru........................... . 1944 | Ambassador. | Edificio El Pacifico-Washington, 7 Piso, Plaza Washington, Lima |
| Poland....................... 1943 | Ambassador | Ulica Katowicka 31, Saska Kepa, Warsaw |
| Portugal.................... 1952 | Ambassador................... | Rus Marques da Fronteira No. 8, Lisbon |
| Republic of Zambis.......... 1966 | 'High Commissioner............ | o Caladia Emabassy, Bldg. C.C.C.I., Boulevard da 30 juin, Leopold̃ille |
| Senegal........................ 1982 | Ambassador | 4 Avenue de la Republique, Immeuble Daniel Sorono, Dakar |
| Sierra Leone. . . . . . . . . . . . . . . . 1961 | -High Commissioner............ | c/o Office of the High Commissioner for Canada, New Barelays Bank Bldg., 40 Merina Dr., Lagos. Nigeria |
| Singapore.................... 1966 | High Commissioner............ | American International Bldg., Robinson Rosd and Telegraph St. |
| South Africe.................. 1940 | Ambsssador | Standard General Bldg., 238 Vermeulen St., |
| Spain. . . . . . . . . . . . . . . . . . . 1953 | Ambassador. | Edificio España, Plaza de Espafor, 2, Madrid |
| 8udan......................... 1961 | *Ambassador | c/o Cmidian Embasey, 6 Sbaria Roustom Pasha, Garden City, Cairo, United Arab Republic |
| Sweden....................... 1947 | Ambassador | Strandyagen 7-C. Stockbolm |
| Switzerland. .............. 1947 | Ambasrador | 88 Kircbenfeldstrasse, Berne |
| Syrian Arab Republio......... 1965 | *Ambas | c/o Canadian Embasay, Immenble Alpha, rue Clemenceas, Beirut, Lebanon |
| Thailand..................... 1961 | *Ambasgador. | c/o Office of the High Commissioner for Canada, American International Assurance Btdg., Ampang Rd., Kuals Lumpur. Malaygia |
| Togo........................ 1962 | *Ambassador................... | c/o Oflice of the High Commistioner for Canada, E 115/3 Independence Ave., Actrs, Ghana |
| Trinidad and Tobago........ 1962 | *Aigh Commisaloner | 72 South Quay. Port-ol-Spain, Trinidad |
| Tunisis....................... 1961 | *Ambassador. | c/o Canadian Embassy, 88 Kirchenfeldstrasse, Berne. Switzerland |
| Turkey....................... . 1947 | Ambsssador. | Ahmet Agaoglu Sokagi, No. 32, Cankaya, Ankara |
| Ugands..................... . 1906 | *Higb Commisaioner. . . . . . . . . | c/o Office of the High Commissioner for Canada, Gailey and Roberts Bldg., InRepublic of Tanzanta |
| Union of Soviet Socislist Republics. 1943 | Ambassador.................. | ${ }^{23}$ Starokonyushenny Pereulok, Moscow |
| United Arab Republic........ 1954 | Ambassador | 6 Sharia Roustom Pagha, Garden City, |
| United Republic of Tanzania............... 1962 (1964) | High Commissioner. . . . . . . . . | Gailey and Roberts Bidg., Independence Ave., Dar-eg-Salaare |

[^55]
## 1.-Canadian Representation Abroad-continued

| Country and Year Repregentation Established | Pregent Status of Representative | Addresa |
| :---: | :---: | :---: |
| United States of America..... 1827 | Ambassador.. | A Ave. N.W., Washington |
| Upper Volta. . . . . . . . . . . . . 1962 | *Ambassador | c/o Office of the High Commissioner for |
| Upper Voka.................... |  | Canada, E (115/3 Independente Ave., |
| Urugusy...................... 1958 | Ambassador | 1409 A venida Agraciads, Montevidoo |
| Venezuels..................... 1952 | Ambassador | Avenida La Estancia No. 10, Cindad Com- |
| Yugoulavis.................... 1943 | Ambassedor. | Proliterskih Brigada 69, Belgrade |
| Other Misslons |  |  |
| Canadian Military Mission.... 1846 | Head of Mission. | Perthahire Block, Olympic Stadium, British Headquarters. Berlin (Britiah Sector) |
| Delegation of Canada to the |  |  |
| for Supervision and Control <br> in Cambodia. ................ 1954 | Acting Commissioner.......... | 224 Kéo Cbéa, Phnom Penh |
| Delegation of Canada to the Invernational Commission for Supervision and Control in Laos. | Commigaioner................. | rue Tat Luang, Vientiane |
| Delegation of Canada to the Interustional Commisaion for Supervision and Control |  |  |
| in Viet-Nam.............. 1954 | Commissioner. . | Camy Vo Thanh, P.O. Box 220. Saigon |
| Delegation of Cansda to the North Atlantic Council..... 1952 | Permanent Representative and Ambassador. | Place du Marechal de Lattre de Tassigny Paris 16 |
| Organization for Economic Co-operation and Development. | Permazent Representative..... | Place du Maréchal de Lattre de Tassigny Paria 16 |
| Mivsion of Canade to European Communities..... 1950 | Head of Mission and Ambaesador. | 35, rue de la Science, Brussels 4 |
| Permanent Misoion of Cansds to the United Nations...... 1948 | Permanent Representative and Ambassador. | 750 Third Ave., New York, N.Y. |
| Permanent Mission of Canads to the Office of the United Nations in Geneva........... 1948 | Permanent Representative and |  |
| Canadian Delegation to the Conference of the Eighteen-Nation-Committee on Disarmament..................... . 1862 | A mbasasar and Adviser to the | 15, Pare du |
| Permanent Delegation of Canade to the United Nations Educational, Scientific and Cultural Organizatiod....... 1960 | Permanent Delegate........... | 2, Parc du Chateau Banquet, Geneva 1, rue Cbadez, Paris 16 |
| Consulates |  |  |
| Brazil.,...................... 1947 | Constul. | Rua 7 de Abril 252, SAo Paulo |
| Fтaдce........................ 1965 | Consul Generai | Hotel Grand Montre, Bordeaux |
|  | Consul General. | 24 avenue du prado, Marseille, Bouche-duRhône |
| Germany .................... 1988 | Consul General . . . . . . . . . . . . . . . | Ferdinandstrasse 69 , Hamburg ${ }^{\text {a }}$, Diesal. |
|  | Consur | dorf |
| Ttaly ${ }^{\text {Heprbic...................... } 1963}$ | Consal General | Via Pirelli 19, Milan |
| Pepablic of the Philippines... 1949 <br> United States of America .... 1948 | Consul General. | L and S Bldg. 1414 Dewey Blvd., Manila |
| United States of America.... 1948 | Consul General Consul General |  |
| ... 1964 | Consul.... | Illuminating Bldg., 55' Public Square. |
| $\begin{array}{ll} " & \ldots . .1948 \\ " & \ldots . .1953 \end{array}$ | Consul. <br> Consul General | 1139 Penobacot Bldg., Detroit 26, Mich. 510 W. Sixth St., Los Angeles 14, Cal. |

[^56]
## 1.-Canadian Representation Abroad-concluded

| Country and Year Representation Established | Present Status of Representative | Address |
| :---: | :---: | :---: |
| Consulates-concluded |  |  |
| United States of America..... 1952 | Consul General. | Suite 1710, 225 Baronne St., New Orleans 12, |
| u $\quad . . .1943$ | Consul General. | 680 Fifth Ave. New York, N.Y. |
| $\ddot{4}$ | Consul........ | 3 Penn Center Plaza, Philadelphia 2, Pa. |
| " $\quad$......1953 | Consul General | 333 Montgomery St., San Francisco 4, Cal. 1407 Tower BIdg., 7th Ave., at Olive Way, Seattle 1, Wash. |

## 2.-Representation of Other Countries in Canada

| Country and Year Representation Established | Present Status of Representative | Address |
| :---: | :---: | :---: |
| Algeria........................ 1964 | Ambasador. | 2200 R St. N.W., Washington, D.C. 20008 , U.S.A. |
| Argentins.................... 1941 | Ambasaador. | 211 Stewart St., Ottawa |
| Australia..................... 1940 | High Commissioner | 90 Sparks St., Ottawa |
| Austria........................ 1952 | Ambassador.. | 86 Range Rd., Ottawa |
| Belgium. . . . . . . . . . . . . . . . . . . 1937 | Ambassador. | 188 Laurier Ave. E., Ottawa |
| Brazil......................... 1941 | Ambassador....... | 800 Wigin St., Ottawa |
| Britain............................ 19.1958 | High Commissiover | 116 Albert St., Ottawa |
| Camerood..................... 1962 | Ambassador . . . . . . . . . . . . . . . . | 85 Range Rd., Ottawa |
| Ceylon........................ 1957 | High Commissioner | 85 Range Rd., Ottawa |
| Chile......................... 1942 | Ambassador ...... | 56 Sparks St., Ottawa |
| China......................... 1942 | Ambassador | 201 Wurtemburg St., Ottawa |
| Colombia................... 1953 | Ambssador................ | 140 Wellington St., Ottawa |
| Congo (Leopold ville)......... 1965 | Charte d'Affaires ad interim... | 54 Rsange Rd. Ottaw's |
| Costa Rica................... 1963 | Ambassador. ................... | c/o Embassy of Costa Rica, 2112 s St. N.W. Washington, D.C. 20008, U.S.A. |
| Cubs......................... 1845 | Ambassador, | 330 Chapel St., Ottawa 2011 R St. N.W. |
| Cyprus....................... 1964 | High Commissioner.. . . . . . . . . | c/o Embabsy of Cyprus, 2211 R St. N.W., Washington, D.C. 20008, U.S.A. |
| Crechoslovakia.............. 1942 | Ambassador. | 171 Clemows Ave., Ottawa 6600 -16th St, |
| Dabomey..................... 1964 | Ambassado | e/o Embassy of Dahomey, 6600-16th St. N.W., Washington, D.C. 20012, U.S.A. |
| Denmark. . . . . . . . . . . . . . 1946 | Ambassador | 85 Range Rd., Ottawa |
| Dominican Republic. . . . . . . . 1954 | Ambassadior. ................. | 200 Ridean Terrace, Ottawa |
| Ecusdor..................... 1961 | Charge d'Affaires od interim... | 56 Sparks St., Ottawa |
| El Salvador................. . 1962 | Ambassador................... | St. N.W., Washington, D.C. 20008, U.S.A. |
| Finlgrd. . . . . . . . . . . . . . . . . . 1948 | Ambassador | 85 Range Rd., Ottawa |
| France. . . . . . . . . . . . . . . . . 1928 Gabon. . . . . . . . . . . . . 1962 | Ambasaador | ${ }_{4900-16 t h ~ S t h e n ~}^{\text {Sta }}$ N.W., Washington, D.C. |
| Gabon....................... 1962 | Ambassado | 20011, U.S.A. ${ }^{\text {a }}$., |
| Germany. . . . . . . . . . . . . . . 1951 | Ambassador | 1 Waverley St., Ottawa |
| Ghana....................... 1961 | High Commissioner | 75 Albert St., Ottawa |
| Greece. . . . . . . . . . . . . . . . . . . 1942 | Ambassador | Chateau Laurier Hotel, Ottawa W.C. 20008 , |
| Guatemals................... 1981 | Ambas | 2220 R St. N.W., Washington, D.C. 2000 , U.S.A. |
| Guines..................... . 1962 | Ambassador. | c/o Embassy of Guinea, 2112 Leroy P1. N.W., Washington. D.C. 20008, U.S.A. |
| Hsiti. . . . . . . . . . . . . . . . . . 1954 | Ambassador. . . . . . . . . . . . . | 150 Driveway, Ottaws |
| Hungary...................... . 1964 | Cbarge d'Affaires ad interim... | 7 Delaware Ave., Ottawa $1906-23 \mathrm{rd}$ St. |
| Iselsnd. ..................... 1948 | Ambassador.................. | e/o Embassy of Iceland, ${ }^{\text {N. Wr. Washington, D.C. } 20008, \text { U.S.A. }}$ |
| India.......................... . 1947 | High Commissioner. | 200 MacLaren St., Ottawa |
| Indonesia. . . . . . . . . . . . . . . . . 1953 | Ambasgador. | ${ }_{85}^{85}$ Ragage Rd., Ottawa |
| Iran........................... . 1956 | Ambasasdor |  |
| Iraq. . . . . . . . . . . . . . . . . . . . . . 1961 | Ambasaador | U.S.A. |
| Ireland........................ 18.1888 | Ambassedor. | 170 Metcalie St., Ottawa |
| Irrael.......................... 1958 | Ambassador | 172 mawelarene., St., Ottawa |

2.-Representation of Other Countries in Canada-concluded

| Country and Year <br> Representation Established | Present Status of Representative | Address |
| :---: | :---: | :---: |
| Ivory Coast. . . . . . . . . . . . . . 1064 | Ambaseador. | c/o Embasay of Ivory Coast, 2424 Massa chusetts Ave. N.W., Washington, D.C 20008, U.S.A. |
| Jamaica..................... 1962 | High Commissioner | 90 Sparks St., Ottawa |
| Jвpan. . . . . . . . . . . . . . . . . . 1928 | Ambsssador. | 75 Albert St., Ottawa |
| Kопея......................... 1963 | Ambassador | 77 Metcalfe St., Ottawa |
| Kuwait. . . . . . . . . . . . . . . . . . 1965 | Ambassador | 2940 Tilden St. N.W., Washington, D.C. 20008, U.S.A. |
| Lebanon. . . . . . . . . . . . . . . . . 1985 | Ambasssod | 401 Albert St., Ottawa |
| Luxembourg. . . . . . . . . . . . . . . 1950 | Ambassad | e/o Embassy of Luxembourg. 2210 Massa chusetts Ave. N.W., Washington, D.C 20008, U.S.A. |
| Madagascar.................. 1965 | Ambassador. | o/o Embassy ol the Malagasy Republic, 2374 Massachusetts Ave. N.W., Washington, D.C. 20008, U.S.A. |
| Mali........................... 1963 | Ambassador | e/o Embassy of Mali, 2130 R St. N.W. Washington D.C. 20008, U 8.A |
| Merico.................... . 1944 | Ambassad | 88 Metcalie St., Ottawa |
| Morocco. . . . . . . . . . . . . . . . . . . 1962 | Ambarsad | c/o Embassy of Morocea, 3601 -21st St. N.W., Washington, D.C. 20009, U.S.A. |
| Nepal......................... . 1986 | Ambassador | c/o Embasay of Nepal, 2131 Leroy Pl. |
| Netherlands. . . . . . . . . . . . . . 1939 | Ambassador | 12 Mariborough Ave., Ot |
| New Zealand.. .............. 1942 | High Commi | 77 Metcalfe St., Ottawa |
| Nicarsgua,.................... 1963 | Ambassador | 1827 New Hampshire Ave. N.W., Washing ton, D.C. 20009 U.S.A. |
| Niger......................... 1963 | Ambassador | c/o Embassy of Niger, 2013 Q St. N.W., |
| Nigeria. . . . . . . . . . . . . . . . . 1986 | High Commissioner | Ottawa |
| Norway. . . . . . . . . . . . . . . . . . 1942 | Armbassador | 140 Wellington St., Ottawa |
| Pakistan. . . . . . . . . . . . . . . . . 1949 | High Commissionex | 505 Wilbrod St., Ottawa |
| Panama...................... 1962 | Ambassador. | c/o Embassy of Panama, 2601-29th St. N.W., Waghington, D.C. 20008, U.S.A. |
| Peru......................... 1944 | Ambsesador. | 539 Lsland Park Drive, Ottawa |
| Poland. . . . . . . . . . . . . . . . . . . 1942 | Ambassado | 10 Range Rd., Ottawa |
| Prortugal. . . . . . . . . . . . . . . . . 19.1952 | Ambassador | 285 Harmer Ave., Ottawa |
| Rwanda. . . . . . . . . . . . . . . . . . . 1965 | Ambessador | c/o Embassy of the Republic of Rwanda, 5308 Colorado Ave. N.W., Wasbington, D.C. 20011, U.S.A. |
| Senegal. . . . . . . . . . . . . . . . . . . 1963 | Ambassador | c/o Embassy of Senegal, 2112 Wyoning Ave. |
| South Africa. . . . . . . . . . . . . . 1938 | Ambassa | N.W., Washington, D. <br> 15 Sussex Drive, Ottawa |
| Spain..........................1953 | Armbassador | 124 Springfield Rd., Ottawa |
| Sudan........................ 1966 | A mabassador | e/o Permazent Mission of the Sudan to the United Nations, 757 Third Ave., New York 17, N.Y., U.S.A. |
| Sweden . . . . . . . . . . . . . . . . . 1943 | Ambassador. | 140 Wellington St., Ottaws |
| Switzerland................... 1946 | Ambessador. | 5 Marlborough Ave., Ottawa |
| Thailand..................... 1962 | Charge d'Aftaires ad interim.... | 119 Range Rd., Ottaws |
| Togo........................... 1968 | Ambassador.................... | c/o Embassy of the Repablic of Togo, 2208 Massachusetts Ave. N.W., Washington D.C. 20008, U.S.A. |
| Trinidad and Tobago........ 1962 | High Commissioner. | 75 Albert St., Ottawa |
| Tunisis...................... . 1957 | Arabassedor.. | c/o Tunisian Permanent Mission to the United Nations. Tunisia House. 40 East 71st St., New York 21, N.Y., U.S.A. |
| Tarkey. . . . . . . . . . . . . . . . 1949 | Ambassador. | 197 Wurternburg St., Ottawa |
| Uganda. . . . . . . . . . . . . . . . . 1984 | High Commissione | o/o Permanent Mission of Uganda to the United Nations, 801 Second Ave., Now York 17, N.Y., U.S.A. |
| Union of Soviet Socialist <br> Republics . . . . . . . ........ . 1942 | Arabassa |  |
| United Arab Republic........ 1954 | Ambsasador | 454 Laurier Ave. East, Ottawa |
| United Republic of ${ }_{\text {Tanzania. . . . . . . . . . } 1965}$ | High Commissioner | 230 Gloucester St., Ottawa |
| United States of America.... 1927 | Ambassador.. | 100 Wellington St., Ottawa |
| Upper Volta.................. 1966 | Ambaseador. | c/o Embassy of the Republic of Upper Volta, $5500-16 \mathrm{th}$ St. N.W., Washington D.C. 20011, U.S.A. |
| Uruguay ...................... 1948 | Charge d'Affaires ad interim.... | 124 Springfield Rd.. Ottawa |
| Yenezuela.................... 1953 | Arabassedor.................... |  |
| Yugoslavia.................... 1942 | Ambssasdor....................... | 17 Blackburn Ave., Ottawa |

## Section 2.-International Activities, 1965-66

## Subsection 1.-Canada and Commonwealth Relations

The Commonwealth today has been transformed basically from the compact and likeminded family of nations of predominantly European stock which constituted the Commonwealth association from the enactment of the Statute of Westminster to 1947. With its present membership of 23 sovereign states covering about one quarter of the earth's land surface, representing more than $750,000,000$ people of many colours, creeds and languages, and including both economically developed and under-developed countries as well as governments committed and uncommitted in the international power groupings, the Commonwealth more accurately reflects the world over which it spreads so widely. The interests of its members extend to all continents and the variety of problems demanding their attention has greatly increased in scarcely more than a decade.

Commonwealth members are enumerated according to the year (if post-1931, noted in brackets) when membership was proclaimed: Britain; Canada; Australia; New Zealand; India (1947); Pakistan (1947); Ceylon (1948); Ghana (1957); Malaya (1957); Nigeria (1960); Cyprus (1961); Sierra Leone (1961); Tanganyika (1961); Jamaica (1962); Trinidad and Tobago (1962); Uganda (1962); Kenya (1963); Malawi (1964); Malta (1964); Zambia (1964); Gambia (1965); Singapore (1965); Guyana (1966). Early in 1964, Tanganyika joined Zanzibar to form the United Republic of Tanzania. When Singapore, Sarawak and Sabah joined the Federation in September 1963, Malaya became Malaysia; Singapore separated from Malaysia in August 1965.

Membership in the Commonwealth is one of the fundamental aspects of Canadian foreign policy. Canada has supported the extension and development of a strong Commonwealth, capable of exerting significant influence for international peace and progress. Commonwealth ties give Canada a special relationship with this group of nations which, despite the diversity of their backgrounds, share important ideals and traditions in common. Commonwealth ties are characterized in the main by a spirit of co-operation developed through consultation and exchange of views. These are continuous not only in Commonwealth capitals but in other countries, and also at United Nations and other international gatherings.

In addition to these continuing exchanges at many levels, special meetings are convened for the purpose of discussing and co-ordinating the interests of Commonwealth members in various special fields, and to review international developments in the Commonwealth context. The most important conference of this kind in 1966 was the meeting of Heads of Government (Prime Ministers and Presidents) held in Lagos, Nigeria, Jan, 11-12, to discuss Rhodesia. This was the first such meeting to be held in Africa, the first to be held after the establishment of the Commonwealth Secretariat, and the first meeting called to deal with a single political issue.

Canada's external aid for developing countries continued to be directed, in the main, to Commonwealth countries through the Colombo Plan, the Commonwealth Caribbean Program, and the Special Commonwealth African Assistance Plan (SCAAP). Canada's total contribution under the Colombo Plan since its inception exceeds $\$ 670,000,000$. Canada aided Commonwealth countries in Africa through SCAAP to a total of $\$ 38,000,000$ for the period from 1960 to the end of March 1966. Approximately $\$ 31,000,000$ was made available for aid and technical assistance to Commonwealth Caribbean countries from 1958 to the end of March 1966. During 1965, Canada also provided, on an increased scale, assistance in military training designed to improve the defence capability of certain Commonwealth countries.

Canada is an active participant in the Commonwealth Scholarship and Fellowship Plan (see pp. 179-180) and during the 1965-66 academic year received 222 students under this Plan, 80 p.c. of them from the developing countries; 77 Canadian students continued their higher education in other Commonwealth countries. Canada is also playing a significant part in the training and provision of teachers for service in Commonwealth countries and
assisting in plans for co-operation in technical education. During the academic year 196566 , there were 533 Canadian teachers and university professors serving under Canadian Government aid programs in the less-developed countries of Southeast Asia, Africa and the Caribbean area, a very substantial proportion of them in Commonwealth countries.

## Subsection 2.-Canada and the United Nations

The constitutional disagreement over the financing of peace-keeping operations which led to the premature adjournment of the 19 th Session of the General Assembly was not resolved during the 20th Session in 1965 but at least a compromise was reached which permitted the Organization to resume functioning. The compromise took the form of a consensus reached in the Special Committee on Peace-keeping Operations that financial difficulties should be solved through voluntary contributions from member states, and that the Assembly should not apply the loss-of-vote penalty of Article 19 of the Charter for failure to pay assessments for peace-keeping in the Congo and in the Middle East. A Canadian proposal to extend the mandate of the Special Committee and to renew the appeal for voluntary contributions was accepted by the Assembly in December 1965.

The United Nations Emergency Force (UNEF) in the Middle East continued throughout 1965, as did the United Nations Force in Cyprus (UNFICYP), and Canada participated in both. To improve the financial position of UNEF, Canada introduced a resolution, subsequently adopted by the Assembly, which combined the principle of assessment with provision for meeting any shortfall in funds without resort to voluntary contributions. The 18-year-old United Nations Military Observer Group in India and Pakistan (UNMOGIP) was reinforced by the United Nations India-Pakistan Observer Mission (UNIPOM) in September 1965 to deal with the Indo-Pakistani conflict over Kashmir. Canada provided the Commander for UNIPOM as well as an air transport unit and observers.

In September, Canada was happy to support the admission to the United Nations of Gambia, the Maldive Islands and Singapore. In contrast, Canada regretted the withdrawal of Indonesia from the United Nations in January 1965 because it has consistently supported the principle of universality in the United Nations. However, Canada did not vote in favour of the representation of the People's Republic of China in the United Nations because it could not accept several of that Republic's conditions for membership, such as the expulsion of the Republic of China, a founding member of the United Nations. As regards the Rhodesian crisis, Canada supported two United Nations resolutions which condemned the unilateral declaration of independence by Southern Rhodesia, but was unable to support another resolution which requested Britain to employ all measures, including military force, to bring down the Smith regime.

In the economic field, Canada supported the merger of the Expanded Programme of Technical Assistance (EPTA) and the Special Fund into the United Nations Development Programme (UNDP), the establishment of a new United Nations Organization for Industrial Development (UNOID), and a resolution designed to extend and put on a permanent basis the World Food Programme, an experimental co-operative arrangement between the Food and Agriculture Organization (FAO) and the United Nations which was begun in 1961 as a result of a Canadian initiative.

In the social sector, the Specialized Agencies continued their efforts to promote education, to relieve hunger and to improve public health. The Canadian representative to the United Nations Children's Fund (UNICEF) was elected to the Chairmanship of the Programme Committee, and the commitment of the Canadian public to UNICEF is demonstrated by the fact that the government contribution ( $\$ 1,000,000$ ) was more than equalled by proceeds from the UNICEF Hallowe'en and Christmas Card campaigns $(\$ 1,100,000)$. Canada has continued to support international efforts for the relief and rehabilitation of refugees; in 1965 contributions to both the United Nations High Commissioner for Refugees (UNHCR) and to the United Nations Relief and Works Agency (UNRWA) were increased, and a Canadian served as Chairman of the Executive Committee of the UNHCR.

The United Nations marked 1965 as International Co-operation Year (ICY). UN member governments, together with interested non-governmental organizations, organized activities designed to emphasize the continuing, if unpublicized, nature of international co-operation in many fields. The Canadian Permanent Representative to the United Nations was Chairman of the United Nations Committee for ICY for most of 1965. Cooperative projects in education, arts, science and sports, the issue of ICY postage stamps, and special features on radio and television for both domestic networks and international transmission were features of the Canadian ICY program.

## Canadian Financial Contributions to the United Nations.-In 1965, Canada's contributions to the United Nations system were as follows:-

| Agency | Percentage <br> Assessment | Costribution (Canadian \%) |
| :---: | :---: | :---: |
| United Nations- |  |  |
| Regular budget. | 3.17 | 3,016,439 |
| Special Accounts- |  |  |
| Operations in the Middie East (UNEF) | $\cdots$ | 734,304 |
| Force in Cyprus (UNFICYP) | . | 3,516,000 |
| Congo Civilian Fund. | . | 500,000 |
| Reliel and Works Agency (UNRWA)- |  |  |
| Cash. | $\cdots$ | 500,000 |
| Food aid. | $\cdots$ | 699,969 |
| World Food Program- | . |  |
| Cash.. | $\ldots$ | 400,000 |
| Commodities. |  | 1,462,885 |
| High Commissioner for Refugees (UNHCR). | . | 290,000 |
| Expanded Programme for Technical Assistance (EPTA) | .. | 2,325,000 |
| Special Fund. | .. | 5,000,000 |
| Children's Fund (UNICEF), | . | 1,000,000 |
| Imstitute for Training and Research (UNITAR) | . | 80,000 |
| Voluntary contribution'. | . | 4,000,000 |
| Spectalized Ageneles and International Atomic Energy Ageney- |  |  |
| Internstional Labour Organization (ILO). | 3.36 | 674,682 |
| Food and Agriculture Organiation (FAO)-- |  |  |
| Regular budget. | 4.15 | 791,849 |
| Voluntary programs. | .. | 5,000 |
| World Health Organization (WHO) | 2.83 | 1,198,191 |
| United Nations Educational, Scientific and Cultural Organization <br> (UNESCO) |  |  |
| International Civil Aviation Organization (ICAO). | 4.51 | 236,541 |
| International Telecommunciation Union (ITU). | 3.26 | 149,850 |
| World Meteorological Organization (WMO). | 2.63 | 47,885 |
| Inter-Governmental Maritime Consultative Organization (IMCO). | 1.60 | 13,256 |
| Universal Postal Union (UPU)...................... | 2.89 | 29,267 |
| International Monetary Fund (IMF) |  |  |
| International Bank for Reconstruction and Development (IBRD). | * | * |
| International Finance Corporation (IFC)........................... |  |  |
| International Development Association (IDA) 4. | $\cdots$ | 15,027,012 |
| International Atomic Energy Agency- |  |  |
| Regular budget. . . . . . . . . . . . . . . . | 2.87 | 226,547 |
| Operational budget. | . . | 61,992 |
| Related Organlzations- |  |  |
| Inter-Governmental Committee for European Migration (ICEM). . | ${ }^{8}$ | 60,000 |
| International Committee of the Red Cross. | .. | 15,000 |
| United Nations Association in Canads. . | - $\cdot$ | 17.000 |

[^57]Specialized Agencies.-Canada is a member of each of the 13 Specialized Agencies of the UN. Additionally, Canada holds membership in the International Atomic Energy Agency (IAEA), an autonomous international organization under the aegis of the UN These Agencies are invested with wide international responsibilities established by intergovernmental agreement, and act in relationship with the UN to assist in carrying out the terms of the Charter. Co-ordination of activities of the Agencies is promoted by the Administrative Committee on Co-ordination established by the Economic and Social Council. This Committee is composed of the Secretary General of the UN, the executive heads of the Specialized Agencies, the Director General of the IAEA and other high officials of the UN. It considers common administrative questions, inter-agency program coordination and projects or problems of special urgency to be undertaken jointly by several Agencies. The Agencies also report annually to the Economic and Social Council of the UN.

International Labour Organization.-The International Labour Organization (ILO) was originally established with the League of Nations in 1919 and became a Specialized Agency of the UN in 1946. It brings together representatives of governments, employers and workers from 114 member states in an attempt to promote social budgets by improving living and working conditions in all parts of the world. The ILO is responsible for a number of technical programs financed by the United Nations Development Programme, as well as training programs under its regular budget. To further its work, the ILO holds numerous meetings during the year, including the International Labour Conference in Geneva each June. At the 49th session of the Conference in June 1965, the principal debate focused, as it has done in recent years, on a continuing examination of modernizing and streamlining the programs and structures of the Organization.

Food and Agriculture Organization.-The Food and Agriculture Organization (FAO) came into being in 1945, the first Conference being held in that year in Quebec City The objectives of the Organization are to raise the levels of nutrition and living standards of its members and to improve the techniques of the production and distribution of food and agricultural, fishery and forestry products. To this end, the FAO Secretariat collects, analyses and distributes technical and economic information and encourages appropriate national and international action. A Council meets twice a year to give direction and policy guidance to the Secretariat; the FAO Conference, which is the governing body of the Organization, meets every other year. Headquarters are in Rome, Italy.

Canada has participated actively in FAO activities and is a member of the Council, the Committee on Commodity Problems (CCP), the Consultative Sub-Committee on Surplus Disposals, the FAO Group on Grains, the North American Forestry Commission and other FAO bodies. A number of Canadians are on the staff at Rome headquarters and many Canadians have undertaken assignments under FAO technical assistance programs. Canadian membership in the Organization is provided for by an Act of the Canadian Parliament passed in 1945. A committee of officials from Canadian Government departments (the Canadian Interdepartmental FAO Committee) has been established to maintain liaison between the FAO Secretariat and the Canadian Government.

The World Food Program first began operations on a three-year experimental basis at the beginning of 1963, under the joint auspices of the FAO and the UN. The Program provides food aid on a multilateral basis for emergency relief and promotes economic and social development, including feeding of children. At a UN-FAO Pledging Conference in New York in January 1966, $\$ 208,000,000$ was pledged toward a second three-year program (1966-68). Canada, with a pledge of $\$ 27,500,000$, is the second largest supporter of the Program.

World Health Organization.-The World Health Organization (WHO) came into being in 1948 and is one of the largest of the Specialized Agencies of the UN, having a membership of 121. Functioning through the World Health Assembly (an organization composed of an Executive Board, a Secretariat and six regional committees), WHO acts as a direct-
ing and co-ordinating authority on international health matters. In addition, it provides advisory and technical services to help countries develop and improve their health services. The 18th World Health Assembly was held in Geneva in May 1965. (See also the item "International Health" in Subsect. 7, Sect. 1, Part I of Chapter VI on Public Health, Welfare and Social Security.)

United Nations Educational, Scientific and Cultural Organization.-The United Nations Educational, Scientific and Cultural Organization (UNESCO) was established in 1946 "to contribute to peace and security by promoting collaboration among the nations through education, science and culture in order to further universal respect for justice, for the rule of law, for human rights and fundamental freedoms" Its headquarters is in Paris and total membership at the end of 1965 was 121 states.

The Organization is made up of three principal organs-the General Conference which is the policy-making body, the Executive Board and the Secretariat. Representatives from member states make up the General Conference which meets every two years to consider applications for membership, elect the Executive Board, plan the program and approve the budget for the ensuing two-year period. The latest General Conference was held in Paris in October and November 1964. It approved a budget of $\$ 48,900.000$, giving priority to the educational needs of the developing countries and to science activities, particularly the application of science to development; the Canadian assessment rate is 2.98 p.c. The next General Conference takes place in Paris in October 1986. Further information about the Organization may be obtained from the Canadian National Commission for UNESCO, Ottawa.

International Civil Aviation Organization.-The International Civil Aviation Organization (ICAO), with headquarters in Montreal, is the only Specialized Agency of the UN with headquarters in Canada. Canada has been a member of the 27 -nation Council, the governing body of ICAO, since its inception in 1947. The 15th Session of the ICAO Assembly, consisting of all member states, was held in Montreal from June 22 to July 19, 1965. A Canadian was elected President of the Assembly. During February 1966 a special ICAO meeting was held in Montreal to discuss the question of liability in connection with air accidents.

International Telecommunication Union.-Canada is a member of the International Telecommunication Union (ITU), a Specialized Agency of the UN, which traces its origin to the International Telegraph Convention of 1865 and the International Radio Telegraph Convention of 1906 . The Plenipotentiary Conference, the supreme authority of the ITU, met in Montreux, Switzerland from Sept. 14 to Nov. 12, 1965. The Conference revised the International Telecommunication Convention which will come into force on Jan. 1, 1967. Canada is represented on the 29 -member Administrative Council, the executive organ of the Union.

World Meteorological Organization.-Canada is a member of the World Meteorological Organization (WMO), a Specialized Agency of the UN since 1951 but developed from the International Meteorological Organization founded in 1878. During 1965, Canada was represented at the regular meetings of a number of the subsidiary bodies of WMO.

Inter-Governmental Maritime Consultalive Organization.-The Inter-Governmental Maritime Consultative Organization (IMCO) was established in 1959 to promote international co-operation on technical shipping problems and the adoption of the bighest standards of safety and navigation. Canada participated in the Conference held in Jordan under the auspices of IMCO from Mar. 24 to Apr. 9, 1965 which drew up the Convention of the Facilitation of Maritime Travel and Transport. Canada was re-elected to the Administrative Council and the Maritime Safety Committee during their regular sessions beld in Paris in September 1965.

Universal Postal Union.-With a membership of 126, the Universal Postal Union (UPU) is one of the largest of the Specialized Agencies of the UN; it is also one of the oldest,
as it was founded in Berne in 1874 with the principal aim of improving postal services throughout the world and promoting international collaboration. The Universal Postal Congress is the supreme authority of the UPU and normally meets every five years to review the Universal Postal Convention and its subsidiary instruments. In the interim, UPU activities are carried on by an executive council of which Canada is at present a member, a consultative committee on postal studies, and an international bureau. The 15th Congress was held in Vienna in May-July 1964.

International Monetary Fund.-The International Monetary Fund, established by the Bretton Woods Conference in 1944, came into being in 1945. It provides machinery for international consultation and collaboration on monetary, payment and exchange problems, including the promotion of exchange stability. the elimination of exchange restrictions, the establishment of a multilateral system of current payments and the expansion and balanced growth of international trade. Also. member countries under certain conditions may draw on the regular resources of the Fund, which now amount to some $\$ 19,200,000,000$ (of which the equivalent of about $\$ 13,600,000,000$ is in gold and convertible currencies) or on the supplementary resources of $\$ 6,000,000,000$ made available in 1962 under the General Arrangements to Borrow. The Fund has 103 members (as at Mar. 31, 1966). Canada has been represented on the Fund's Executive Board since its inception.

International Bank for Reconstruction and Development.-The IBRD or World Bank was founded at the same time as the International Monetary Fund at the Bretton Woods Conference in 1944 to assist the development of productive resources in member countries by extending loans where private cabital is not available on reason, ble tirms and by providing technical assistance. The loans are made from the paid-up subscriptions of member states, from the surplus accumulated by the Bank and from loans raised in the markets of member states. By Dec. 31, 1965, the subscribed capital was $\$ 21,606.000,000$ (U.S.). The Bank's first loans were for European postwar reconstruction but in I9.18 the Bank turned to lending for development and an increasing proportion of its funds has been directed to the less-developed areas of the world. As of Dec. 31, 1965, the Bank had made 446 loans totalling nearly $\$ 9,500.000,000$ (U.S.) since it started operations in 1946. and had used or been able to allocate for lending the equivalent of approximately $\$ 1,779,000,000$ from paid-in capital, including the full $\$ 75,000,000$ of the paid-in portion of Canada's subscription.

Unlike the year 1964 when there were no public offerings, 1965 was marked by an intensive marketing campaign that included public offerings of the Bank's bonds in world markets. These offerings, aggregating the equivalent of nearly $\$ 300,000,000$, included public issues of the Bank in the Canadian market for the first time in nearly 10 years; the Canadian issue was $\$ 25,000,000$, offered in February.

International Finance Corporation.-The function of the International Finance Corporation, which is an affiliate of the IBRD, is to promote the growth of productive private enterprise by assisting private capital, by acting as a clearing house in bringing together investment opportunities and private capital and by helping to enlist managerial skill and experience when not otherwise available to a project. Of a total capital subscription of $\$ 99,000,000$ (U.S.), Canada has provided $\$ 3,600,000$.

International Development Association.-The IDA, also an affiliate of the IBRD, was established in September 1960 to meet the situation of a growing number of less-developed countries whose need for and ability to make use of outside capital is greater than their ability to service conventional loans. Consequently, the terms of IDA development credits are designed to impose far less burden on the balance of payments of borrowing countries than conventional loans. Credits extended to date have each been for a term of 50 years, bearing no interest. At the end of 1965, paid-in and prospective resources of IDA amounted to $\$ 1,676,300,000$ (U.S.). Prospective contributions to be paid in over the three years 1965-68 (subject to legislative authorization) will amount to $\$ 740,745,000$ (U.S.), of which

Canada's share will be $\$ 41,700,000$ (U.S.). IDA began operations in November 1960 and extended its first development credit in May 1961. By Dec. 31, 1965, it had extended a total of 79 development credits totalling $\$ 1,192,300,000$ to 30 countries in Africa, Asia, the Middle East and the Western Hemisphere.

International Atomic Energy Agency.-Formed in 1957, the International Atomic Energy Agency (IAEA) is an autonomous international organization under the aegis of the UN. The Agency was given a mandate to seek to accelerate and enlarge the contribution of atomic energy to peace, bealth and prosperity throughout the world in a variety of ways. Because Canada has been desigoated as one of the five members most advanced in nuclear technology, including the production of source materials, a Canadian representative has served on the IAEA Board of Governors since the inception of the Agency.

As of June 1966, IAEA membership consisted of 96 states. The organization of conferences and symposia of experts, the dissemination of information and the provision of technical assistance are among the methods that the Agency adopts to carry out its functions. With the rapid expansion in the use of nuclear power much of the Agency's program is devoted to this field, as well as to the use to which isotopes may be put in agriculture and medicine. An important aspect of the IAEA activities that is beconing of increasing significance relates to the development and application of safeguard measures to ensure that nuclear materials supplied for peaceful purposes are not diverted to military uses.

International Law Commission.-By Article 13(1) of the Charter of the United Nations, one of the purposes of the UN General Assembly is to encourage the progressive development of international law and its codification. In order to implement and to assist in this function, the International Law Commission was created by a General Assembly resolution dated Nov. 21, 1947. It is composed of 25 members who are elected in their individual capacity. They serve for terms of five years and, in general, represent the main forms of civilization and principal legal systems of the world. On Nov. 28, 1961, Canada's Under-Secretary of State for External Affairs was elected to membership of this Commission. The 25 countries whose nationals form, at present, the International Law Commission are: Afghanistan, Algeria, Argentina, Austria, Brazil, Britain, Canada, China, Ecuador, Finland, France, India, Iraq, Israel, Italy, Japan, Nigeria, Poland, Senegal, Spain, the Union of Soviet Socialist Republics, the United Arab Republic, the United States of America, Uruguay and Yugoslavia.

## Subsection 3.-Canada and the North Atlantic Treaty Organization*

Two Ministerial meetings were held during 1965 and meetings of the Permanent Representatives to the North Atlantic Council were held continuously throughout the year at NATO headquarters in Paris.

The annual spring meeting was held in London on May 11-12, attended by the Foreign Ministers of the NATO Alliance. The Canadian delegation was led by the Secretary of State for External Affairs. In surveying the international scene, Ministers noted that, so far as Europe was concerned, the situation was basically unchanged. There had been no major crisis or confrontation and the trend toward increased contacts between East and West has continued. On the other hand, the fundamental causes of tension still persisted and little, if any, progress had been made toward removing them. Particular attention was given during the discussions to areas of tension or conflict, such as Malaysia, Viet-Nam, Cyprus, the Dominican Republic and some African States, where threats to international security and peace had arisen.

[^58]The Ministers welcomed the continuing progress in political consultation within the Alliance, observed with satisfaction the more frequent attendance of Ministers and senior officials from capitals at regular meetings of the Council in permanent session, and noted that the Council had embarked on the study of the state of the Alliance which, at the preceding Ministerial meeting, it had been directed to undertake. The hope was expressed that, without prejudging the legal and political position of any member, an early solution would be found to the difficulties facing the UN and thus enable that organization to play its proper role in helping to preserve international peace and security.

The annual Ministerial meeting held in Paris Dec. 14-16 was attended by a Canadian delegation led by the Secretary of State for External Affairs and the Minister of National Defence. The Ministers noted that members of NATO had promoted and extended their contacts and exchanges with the U.S.S.R. and the countries of Eastern Europe, and affirmed that they would continue to seek an improvement in their relations with these countries. It was a matter for satisfaction that the efforts made in this regard had met with some degree of response, mainly in the sphere of bilateral relations. The Ministers noted, however, that the U.S.S.R. continued to oppose a settlement of the cardinal issues between East and West and they therefore emphasized their determination to maintain the unity of the Alliance and ensure its collective defence.

The Ministers noted the progress made in studies of the interrelated questions of strategy, force requirements and resources, which had been initiated at the Ottawa session in May 1963. Force goals for the period 1966-70 were being worked out as the first of a series of steps designed to secure closer alignment between NATO military requirements and national force plans within the agreed strategic concept of a forward defence posture. They accepted in principle the introduction of new procedures designed to improve the annual process of reviewing the defence efforts of member countries and agreeing upon their force contributions. These procedures, by projecting Alliance force goals and country plans five years ahead each year, are intended to enhance the capacity of the Alliance to adapt its defence plans to changes both in military technology and in the international situation. The Ministers instructed the Council in permanent session to review the organizational and financial basis of the Allied Command Europe Mobile Force.

The Secretary General reported on his activities under the 'watching brief' in regard to Greek-Turkish relations entrusted to his predecessor by the Council at The Hague in May 1964. The Ministers agreed that these activities should continue and also reiterated their support for the efforts of the UN to reduce tension in Cyprus. The Council endorsed the Secretary General's plea for an early resumption of constructive discussions between Greece and Turkey and stressed the importance of a speedy solution to the financial and other problems involved in the continuation of the UN peace-keeping operation.

Canadian Contributions to NATO.-Support for NATO during 1965 continued to be one of the foundations of Canadian foreign policy. As its contribution to the military strength of the Alliance, Canada maintains an army brigade and an air division in Europe and supporting forces in Canada, including one battalion assigned to the Allied Command Europe Mobile Force. It has assigned a substantial naval force to the Supreme Allied Commander Atlantic (SACLANT) for the defence of the Canada-United States region in case of emergency and participates with the United States in the defence of the North American Continent through the North American Air Defence Command (NORAD).

Since 1950, Canada has contributed approximately $\$ 1,800,000,000$ in mutual aid to European members of NATO. The aid program, consisting of contributions to NATO infrastructure and military costs, transfers of equipment to member countries and aircrew training in Canada of NATO forces, continued in 1965. This program has decreased in magnitude with the changing conditions and the increasing ability of the European members to meet their individual defence requirements.

## Subsection 4.-Canadian External Aid Programs

The Colombo Plan.-The Colombo Plan for Co-operative Economic Development in South and Southeast Asia was conceived at the Commonwealth Meeting of Foreign Ministers beld at Colombo, Ceylon, in January 1950. Although the Plan was injtiated by Commonwealth governments, it is not exclusively a Commonwealth Program. It is designed to assist in the economic development and the raising of living standards of all countries and territories in the general area of South and Southeast Asia. Its membership now includes Afghanistan, Australia, Bhutan, Britain, Brunei, Burma, Cambodia, Canada, Ceylon, India, Indonesia, Japan, Korea, Laos, Malaysia, Maldive Islands, Nepal, New Zealand, Pakistan, the Philippines, Thailand, Viet-Nam and the United States; the latter is also engaged in a substantial program of economic aid in the same region. Afghanistan and the Maldive Islands are the latest members and were admitted to membership in 1963.

The Colombo Plan is supervised by a Consultative Committee composed of Ministers of the member countries, who meet once a year to review projects and exchange views on policy matters. As a consultative body, it makes no collective policy decisions binding member countries; a Council for Technical Co-operation, on which Canada is represented, meets regularly in Ceylon to develop the technical co-operation program of the Plan. Consultative Committee meetings were held in Karachi in 1952, New Delhi in 1953, Ottawa in 1954, Singapore in 1955, Wellington in 1956, Saigon in 1957, Seattle in 1958, Jogjakarta in 1959, Tokyo in 1960, Kuala Lumpur in 1961, Melbourne in 1962, Bangkok in 1963 and London in 1964. At the Jogjakarta meeting it was agreed to extend the Colombo Plan for another five years from June 1961, and it was similarly extended for a further five years at the London meeting in 1964. Reports of the Committee on progress and future plans are published after each annual meeting; each report also contains sections describing the activities of member countries.

From the inception of the Plan in 1950 through March 1966, Canada made available a total of $\$ 670,619,000$ in grant aid for capital and technical assistance projects in South and Southeast Asia. Although nine countries are now receiving capital assistance from Canada, the largest contributions have so far been made to Ceylon, India, Malaysia and Pakistan. The Canadian contribution consists primarily of direct assistance to various development projects, including equipment for multi-purpose irrigation and hydro-electric projects, power-generating plants, construction and fisheries projects and resources surveys, hospital equipment and cobalt therapy units, as well as educational and laboratory equipment and books. It has also included gifts of raw materials, commodities and foodstuffs, such as industrial metals, asbestos, fertilizer, wheat, wheat flour and butter, from the internal sale of which recipient governments have been able to raise funds to meet local costs of economic development projects.

Under the Technical Assistance Program, up to March 1966, more than 3,500 persons from all countries in the area had come to Canada for training in a variety of fields, the major ones being public administration and finance, agriculture, co-operatives, engineering, mining and geology, statistics, health education and social welfare. More than 375 Canadian experts had been sent abroad for service in Colombo Plan countries in such fields as fisheries, agriculture, engineering, mining and prospecting, co-operatives, public administration, education and vocational training, and public health. Other Canadians were employed on aerial resources survey teams and on the installation and operation of capital equipment.

Commonwealth Catibbean Program.-In 1958, when the Federation of the West Indies was being formed, Canada undertook a five-year $\$ 10,000,000$ program of economic and technical assistance. Following the dissolution of the Federation in 1962, it was decided to continue providing assistance to its component territories-Jamaica, Trinidad and Tobago, Barbados, British Guiana (Guyana), British Honduras and the Leeward and Windward Islands-and, since then, a total of $\$ 21,180,000$ in loans and grants has been made available to the area, including $\$ 10,000,000$ under the 1965-66 program.

Under this program, the area and its territories have been provided with two passengercargo ships for inter-islaad transportation, a deep-water wharf at St. Vincent, a residence for the University of the West Indies in Trinidad, port-handling equipment for five harbours and, for several of the smaller islands, schools, warehouses and fresbwater supply facilities. Projects under way include an aerial survey of Trinidad, a scheme for the expansion and improvement of Trinidad's dairy herds, the provision of rural schools, teacherages and a sewerage system in Jamaica and a prefabricated fish-packing plant in Guyana, and the construction of a bridge in British Honduras.

A substantial amount of technical assistance has also been given. During the year ended Mar. 31, 1966, training programs were arranged in Canada for 431 students from the Commonwealth Caribbean, the fields of study including agriculture, engineering, fisheries, forestry, medicine and public administration. In addition, 130 Canadians served in the Commonwealth Caribbean, including teachers, soil surveyors, and advisers in the fields of statistics, legal drafting, housing, films, radio broadcasting, postal services, Indian affairs, technical education and harbour management.

Special Commonwealth African Assistance Plan.-In the autumn of 1960 the Canadian Government undertook, subject to parliamentary approval, to contribute $\$ 10,500,000$ to a Special Commonwealth African Assistance Plan (SCAAP) over a threeyear period beginning Apr. 1, 1961. This program arose from discussions at the Meeting of Commonwealth Prime Ministers in 1960. Although entirely a Commonwealth scheme, SCAAP is essentially the counterpart in Africa of the Colombo Plan in Asia. The main donor countries are Britain, Canada, Australia and New Zealand. Some of the newer Commonwealth members, particularly India and Pakistan, have been able to provide limited amounts of technical assistance in fields in which they have experience and specialized knowledge. All Commonwealth countries and dependent territories in Africa qualify for development assistance under the SCAAP program.

As occurred in other areas of Canada's expanding aid program, the level of grant aid to SCAAP increased in $1965-66$ to $\$ 9,500,000$ from $\$ 6,500,000$ in the previous fiscal year and development loan assistance to $\$ 5,000,000$ from $\$ 4,500,000$. In 1965, the first Canadian development loan in Africa was extended to Nigeria in the amount of $\$ 3,500,000$, and early in 1966, two loans totalling $\$ 2,450,000$ were granted to Tanzania. A $\$ 2,000,000$ food aid grant in the form of wheat flour was made to Ghana.

Technical assistance programs continued to receive major emphasis. During 1965-66, 436 Canadian teachers, professors, and Canadian technical experts were on assignment in Africa while 526 African students received academic and technical training in Canada. This represented a sharp increase in the program of technical assistance from the previous year.

Canadian capital assistance has concentrated on projects assigned a high priority by the recipient country and in which Canada has a high degree of expertise. These included aerial mapping and survey work, forest inventories, pulp and paper survey and forest products development, irrigation and land reclamation, medical training and wheat research, geological surveys and mineral exploration, and the provision of equipment for schools and national parks. A major Canadian-Ghanaian joint effort was the building, equipping and staffing of the Trades Training Centre at Accra at an estimated Canadian cost of $\$ 1,155,000$. The institution was formally opened in July 1966. A similar institution is planned for Benin City, Nigeria.

The Commonwealth Scholarship and Fellowship Plan.-The proposal to establish a Commonwealth Scholarship and Fellowship Plan was made at the Trade and Economic Conference beld at Montreal in September 1958. The Conference envisaged a scheme of 1,000 university scholarships, of which Britain undertook to provide one half and Canada one quarter. The details of the proposed scheme were worked out at the Commonwealth Education Conference at Oxford in 1959. This Plan was designed to enrich the
intellectual life of each country of the Commonwealth by enabling an increased number of its brighter students to share in the wide range of educational resources available throughout the Commonwealth and thus promote the equality of educational opportunity at the highest level. During the academic year 1965-66, there were 222 Commonwealth scholars in Canada; since the Plan first became operational during 1960-61, a total of 563 scholars have come to Canada for advanced study.

In 1965, Research and Visiting Fellowships were introduced as part of the Canadian contribution to this Plan. It is expected that each year three Research Fellowships will be awarded for a full academic year and five Visiting Fellowships for shorter periods. These Fellowships will enable senior educationists from other Commonwealth countries to visit Canadian universities and other educational institutions to carry out investigations, study or research in their particular fields. During the 1965-66 academic year, four Visiting Fellowships and three Research Fellowships were awarded.

Assistance to French-Speaking States in Africa.-In April 1961 the Canadian Government announced an offer of assistance in the educational field to the French-speaking states in Africa and subsequently appropriated $\$ 300,000$ for this purpose for each of the years ended Mar. 31, 1962, 1963 and 1964. It was decided at the commencement of this program that emphasis should be placed on the provision of Canadian teachers for Africa. For the year ended Mar. 31, 1965, aid was increased and an allocation of $\$ 4,000,000$ was provided to allow for development of a capital assistance program as well as expansion of technical assistance. During that year, 67 teachers served in French-speaking Africa and 54 students received training in Canada. Preliminary surveys for bridge construction and hydro-electric development were carried out; an agriculture education survey of six countries was begun; arrangements were made to supply heavy equipment to assist the Republic of Guinea in its roads improvement program; a series of educational films was offered to Cameroon, Central African Republic, Chad, Congo, Dahomey, Morocco, Niger, Togo and Upper Volta; and a contribution of $\$ 500,000$ was made to the UN Congo (Leopoldville) Civilian Fund.

In the 1965-66 fiscal year the allocation totalled $\$ 7,500,000-\$ 5,500,000$ in grant funds and $\$ 2,000,000$ in development loans. There were 155 teachers on assignments to 16 French-speaking African countries and 97 trainees in Canada. Technical and capital assistance was given to the University of Rwanda; paper for the production of educational literature was supplied to Cameroon, Congo (Leopoldville) and Guinea; film vans and films were made available to Guinea and Gabon; arrangements were made to participate in a livestock improvement program in Cameroon, and a cadastral survey in Morocco; and, as in previous years, $\$ 500,000$ was granted to the UN Congo (Leopoldville) Civilian Fund.

Latin American Program.-A bilateral Canadian aid program for Latin America was initiated in December 1964, when the Canadian Government concluded an agreement with the Inter-American Development Bank (IADB) by which Canada allocated $\$ 10,000,000$ in 'soft' development loan funds for use in high-priority economic, technical and educational projects in Latin America. This initial allocation was augmented in September 1965 with the provision of an additional $\$ 10,000,000$ in development loan funds for the area.

Under the terms of the agreement, the IADB selects and processes proposed loan projects before submitting those considered suitable to the Canadian Government for its approval. By mid-1966, two Canadian development loans totalling $\$ 4,500,000$ had been made available-the Port Authority of Acajutla, one of the main Pacific seacoast ports of the Central American Republic of El Salvador, was granted an interest-free development loan of $\$ 3,240,000$ for the expansion and improvement of port facilities, and Canadian development loan funds of up to $\$ 1,260,000$ were made available to the Republic of Ecuador to finance a resources survey of $13,000 \mathrm{sq}$. miles of agricultural and forest land in that country's Guayas River Valley.

Co-operation with the United Nations and its Specialized Agencies, and with Other International Aid Programs.-In addition to the annual contributions made to the United Nations Expanded Programme of Technical Assistance, Canada arranges training programs in Canada for individuals studying under the auspices of the different Specialized Agencies. This service is also extended to the technical assistance program of the International Co-operation Administration of the United States as well as to other international aid organizations. Up to Mar. 31, 1965, more than 2,000 individuals had come to Canada through the various agencies from more than 100 countries in all parts of the world. Assistance is also given by recruiting Canadians for service with the Specialized Agencies on specific technical assistance assignments in under-developed countries.

External Aid Office.-As of Nov. 9, 1960, the operation and administration of Canada's external assistance programs became the responsibility of the External Aid Office, established by Order in Council of that date and placed in charge of a Director General.

As mentioned under the separate programs above, additional funds were made available for grant assistance in 1964-65. Canada also introduced a development loan program for which $\$ 50,000,000$ was authorized by Parliament on a non-lapsing basis. The terms of the loans are comparable with those of the International Development Associationup to 50 years maturity, non-interest-bearing, ten-year grace period, and 0.75 of I p.c. service charge.

Also during 1964-65, Parliament approved for the first time the establishment of a separate food aid program under which the External Aid Office is able to purchase food products to meet part of the Canadian contributions to the FAO World Food Program and to meet the needs of countries requesting this form of Canadian assistance.

## Subsection 5.-Organization for Economic Co-operation and Development

The Organization for Economic Co-operation and Development (OECD) was established in October 1961 as successor to the OEEC, with Canada and the United States joining the countries of Western Europe as full members of the new body. Japan, previously a member of the Development Assistance Committee, became, in May 1964, a full member of the OECD and the first member from outside Western Europe or North America.

The prime purpose of the OECD is to promote among member governments co-operation in the fields of economic policy, trade and assistance to developing countries, although it also provides a valuable forum for discussion of common problems in agriculture, industry, finance, technology and manpower policy. In 1963, Ministers approved an annual growth target for member countries for the next seven years of 4 p.c. in real gross national product. Because of its development from the former OEEC, the Organization was at first concerned largely with questions of primarily European interest but, as its membership expanded, it has become increasingly a recognized forum for broader consultation among advanced industrial countries, particularly on questions of economic and financial policy and on the problems of the developing countries. In this latter regard, the OECD now constitutes the main forum for consultations among developed countries concerning the work of the UNCTAD Trade and Development Board, and its committees.

The OECD brings together government officials as well as representatives of private business, labour unions, universities and other non-governmental bodies in both deliberative and consultative capacities, and provides for international liaison among such groups. Within Canada, liaison has been established with the business community through the Canadian Business and Industry Advisory Cormmittee, which was established in 1962 and comprises representatives of the Canadian Chamber of Commerce, the Canadian Council of the International Chamber of Commerce and the Canadian Manufacturers' Association. Parallel arrangements exist for consultation with Canadian labour organizations.

## CHAPTER III.-POPULATION*

| CONSPECTUS |  |  |  |
| :---: | :---: | :---: | :---: |
| Page |  |  | Page |
| Section 1. Census of Populatio | 182 | Subsection 7. Ethnic Groups and Birth- |  |
| Subsection 1. Growth and Movement of Population.. | 182 | places......... | 196 198 |
| Subsection 2. Deasity of Population. | 185 | Subsection 9. Lsaguages and Mother |  |
| Subsection 3. Rural and Urban Population | 186 | Subsection 10. Households and Families. | 199 |
| Subsection 4. Populations of Incorporated Cities, Towns and Villages and of Metro- |  | Subsection 10. Households and Families. Section 2. Intercengat Surverb....... | 200 |
| politan Areas.... ..... .. | 187 | Section 3. The Native Peopleg of Canada | 202 |
| Subsection 5. Sex and Age Distribution.... | 193 | Section 4. Statibtics of World Poputa |  |
| Subsection 6. Marital Status.. | 196 | TION...... . . . . . . . . . . . . . . . . . . . . . . | 209 |

The interpretation of the symbols used in the tables throughout the Year Book will be found on $p$. viii of this volume.

## Section 1.-Census of Population

This Section presents only a brief summary of the voluminous data on population recorded by the 1961 Census of Canada, with certain comparable data from earlier censuses. The results of the limited population census taken on June 1, 1966 were not available at the time of preparation but 1966 figures for as many of the tables included in Subsections 1 to 6 and Subsection 10 as are obtainable immediately before this volume goes to press will be presented in Appendix II. The 1966 Census did not include questions on ethnic origin, birthplace, religious deromination, language or mother tongue so that the 1961 data in Subsections 7 to 9 will remain the latest available until the taking of the comprehensive decennial census in 1971.

Detailed census data are published in a series of reports which are obtainable from the Queen's Printer or the Dominion Bureau of Statistics. A list of these publications is available on request from the Information Division of the Dominion Bureau of Statistics.

## Subsection 1.-Growth and Movement of Population $\boldsymbol{\dagger}$

Population Growth.-Canada's population stood at 18,238,000 in 1961 as against $10,377,000$ in 1931 and $5,371,000$ in 1901. In the first decade of the century, the gain of 34 p.c. was greater than in any censal period up to 1961 . Growth was associated with the opening up of the West for settlement and massive immigration from overseas. During the 1901-11 period, about $1,760,000$ immigrants entered the country and natural increase

[^59]

Vancouver today has a population of almost 1,000,000.


Edmonton became a city in 1904 when it had about 5,000 residents lodoy its population is close to 400,000 .

The site of Vancouver in 1867 was only a landing place for fur traders and adventurers. By 1888 it had a population of , 000 and had already been incorporated as a city.


Montreal, founded in 1642, became a city in 1832 to its population of about 100,000 in 1867 it has added more than 2,300,000.


St. James Street, Montreal, on a winter ofternoen in
1875.

ONE HUNDRED YEARS, meosured agoinst the bockdrop of history, is a very short time, but long enough to hove seen an unbelievable change in this onice vast virgin land of Conada, to have seen its dis. tances ond isolations diminished, to have seen its primitive life evolve to sophisticatian, to hove seen great cities established and grow, straining their boundaries, their cenfres rising skyward in concrete and steel, their people active and prosperous. In the forefront of progress in the past quarter-cen. tury, Canada has marje tremendou: strides in every orea industrial, social and cultural and, taking advantage of the miracles of madern man's devising, moves forward still with increasing speed. It is difficult now to think that one hundred years ago only a handful of buildings lined a remote western bay where now stands the centre of the great metropolis of Vancouver, that o wooden fort overlooking the North Saskofchewan River marked the site of the now burgeoning city of Edmonton, oil centre of the mid. West; that Montre ol, with its then 200 -year history and its population of 100,000 , was Conada's largest city, destined to become one of the major commercial and induatrial cities of the world, harbouring clase to $2,500,000$ people living very much of 20 th century tempo; that other small settlements and uninhobited sites would come to toke their places in the chain of booming cities and industrial towns across this great land.

## Photos by:

George Hunter, Yoronio (colour)
Public Archives of Conado
amounted to an estimated $\mathbf{1 , 0 0 0}, 000$. As the total increase in population was $1,835,328$, it is evident that there was substantial emigration during the period. In the 1911-21 period, population growth dropped to 22 p.c. Military losses in the First World War and losses during the influenza epidemic, which together amounted to about 120,000 , were a factor in this decline. Although the flow of immigrants was reduced during the war years, it had been very heavy immediately preceding the War, so that the total number for the period $(1,612,000)$ was very close to that for the previous censal period. However, emigration was also extremely high and the increase in population amounted to 1,581,306, representing 2 p.c. per annum compared with 3 p.c. in the 1901-11 period.

In the decade 1921-31, the rate of increase dropped to 18 p.c. Immigration fell to $1,200,000$ and emigration was estimated at $1,000,000$. Thus the increase in population, which amounted to $1,588,837$, was only 229,000 greater than the natural increase. A feature of this period was the rapid growth of population in Western Canada, partly the result of immigration and partly the result of an influx of people from Eastern Canada. During 1931-41, the population increase was just under 11 p.c. During the depressed conditions of the 1930 's, marriage and birth rates were significantly lower and only 150,000 immigrants came to Canada, although, in addition, 75,000 Canadians returned from the United States. Emigration was also much lower than in the previous decades, amounting to an estimated 250,000 . Natural increase was only $1,220,000$, the crude birth rate falling from 27 per thousand of the population in the 1921-25 period to 24 per thousand in the succeeding five-year period and to 20 per thousand during much of the 1931-41 decade. During 1941-51, population growth was restored to pre-depression levels. Excluding Newfoundland which became part of Canada in 1949 , it amounted to 19 p.c.; including Newfoundland it was 22 p.c. Much of the increase took place in the second half of the decade, reflecting heavy postwar immigration and a sharp rise in the marriage and birth rates.

In the 1951-61 period, the population growth rate at 30 p.e. came close to approaching the extremely high rate of the first decade of the century. However, the two periods contrast in many ways. In the early period there was a wider dispersal of population increases as whole regions across the Continent were opened up; in the recent period there was a concentration of growth in urban communities although some spreading of population into newly developed northern areas took place. Natural increase accounted for about 75 p.c. of the growth. Although there was some decline in the death rate, the trend of natural increase reflected very closely that of the crude birth rate which began to rise during the War and remained high throughout the period. Net immigration accounted for the remainder of the increase; during the decade, $1,542,853$ immigrants entered the country, more than double the estimated emigration. Although all provinces gained in population during 1951-61, the rates of increase varied widely. The greatest increases resulted from a combination of natural increase and net migration which in the two large provinces of Central Canada and the two most westerly provinces accounted for over 87 p.c. of the total actual increase. In contrast, increases in the other six provinces were entirely accounted for by natural increase.*

[^60]
## 1.-Numerical Distribution of Population by Province, and Percentage Change from Preceding Census, Decennial Census Years 1901-61

Note.-Populations for the decennial census years 1871, 1881 and 1891 are given in the 1956 Year Book, p. 149 The populations of the Prairie Provinces in 1906, 1916, 1926, 1936 and 1946 will be found in the 1951 edition, p. 131 , and census populations for 1956 in the 1961 edition, p. 146.

| Province or Territory | 1901 | 1911 | 1921 | 1931 | 1941 | 1951 | 1961 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Numerical Distribution |  |  |  |  |  |  |
| Nfld. | 1 | 1 | 1 | 1 | 1 | 361,416 | 457, 853 |
| P.E.I. | 103,259 | 93,728 | 88,615 | 88,038 | 95,047 | 98, 429 | 104,629 |
| N.S. | 459,574 | 492,338 | 523,837 | 512,846 | 577,962 | 642,584 | 737,007 |
| N.B. | 331,120 | 351,889 | 387,876 | 408,219 | 457,401 | 515,697 | 597,936 |
| Que. | 1,648,898 | 2, 005,776 | 2,360, 510 | 2,874,662 | 3,331,882 | 4, 055,681 | 5,259,211 |
| Ont. | 2,182,947 | 2,527,292 | 2,933,662 | 3,431,683 | 3,787,655 | 4,597,542 | 6,236,092 |
| Man. | 255, 211 | 461,394 | 610,118 | 700,139 | 729,744 | 776,541 | -921,686 |
| Sask. | 91,279 | 492,432 | 757,510 | 921,785 | 895.992 | 831,728 | 925,181 |
| Alta | 73,022 | 374,295 | 588,454 | 731,605 | 796,169 | 939,501 | 1,331,944 |
| B.C. | 178,657 | 392,480 | 524,582 | 694,263 | 817,861 | 1,165,210 | 1,629,082 |
| Y.T. | 27, 219 | 8,512 | 4,157 | 4,230 | 4,914 | - 9,096 | 1, 14,628 |
| N.W.T | 20,129 | 6,507 | 8,143 | 9,316 | 12,028 | 16,004 | 22,998 |
| Canada. | 5,371,315 | 7,206,643 | 8,787,949 ${ }^{2}$ | 10,376,786 | 11,506,655 | 14,009,429 | 18,238,247 |

Percentage Change from Preceding Census

${ }^{1}$ Populations of Newfoundland (not part of Canada until 1949) were: 1901, 220,984; 1911, 242,619; 1921, 263,033; 1931, 281,500 (estimated); 1941, 303,300 (estimated); and 1945, 321,819. $\quad$ Includes 485 members of the Royal Canadian Navy recorded separately in 1921.
2.-Factors in the Growth of Population, 1951-61

| Province or Territory | $\begin{gathered} \text { Population } \\ 1951 \\ \text { Census } \end{gathered}$ | Births | Deaths | Natural Increase | Immigration | Actual Increase | Net Migration | $\begin{aligned} & \text { Population } \\ & 1961 \\ & \text { Census } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No. | No. |
| Nfid. | 361,416 | 141,165 | 30,169 | 110,996 | 4,200 | 96,437 | -14.559 | 457,853 |
| P.E.I | 98, 429 | 26,990 | 9,369 | 17,621 | 1,451 | 6,200 | $-11,421$ $-33,870$ | 104,629 |
| N.S. | 642,584 | 187,571 | 59,278 <br> 45 <br> 838 | 128,293 119,461 | 19,148 9.718 | 94,423 <br> 82 | $-33,870$ -37.222 | 797, 936 |
| Que. | 515,697 $4,055,681$ | 1,348,440 | 350,140 | 998, 300 | 325, 329 | 1,203,530 | 205,230 | 5,259,211 |
| Ont. | 4,597,542 | 1,426,211 | 472,718 | 953,493 | 817,292 | 1,638,550 | 685,057 | 6,236,092 |
|  | 776,541 | 220,016 | 70,326 | 149,690 | 66,344 | 145,145 | -4,545 | 921,686 |
| Sask | 831,728 | 238,998 | 66,674 | 172, 324 | 30,715 | 93,453 | -78,871 | 925,181 |
| Alta | 939,501 | 345, 025 | 79,830 | 265, 195 | 112,520 | 392,443 | 127,248 | 1,331,944 |
|  | 1,165,210 | 355,736 | 131,945 | 223,791 | 155,052 1,084 | 463,872 12,528 | 240,081 3,492 | $1,629,082$ 37,626 |
| Y.T. and N.W.T. | 25,100 | 12,889 | 3,855 | 9,034 | 1,084 | 12,528 | 3,492 | 37,626 |
| Canada | 14,009,429 | 4,468,340 | 1,320,142 | 3,148,198 | 1,542,853 | 4,228,818 | 1,080,620 | 18,238,247 |

Table 3 shows the natural increase and the total population increase for Canada and the provinces in the periods 1941-51, 1951-56 and 1956-61. The balance between the total increase in population and the natural increase during a period represents the difference between inward and outward movements, i.e., net migration. The net migration data shown for provinces indicate the net movement of population arising partly from interchange of population between provinces and partly from persons entering and leaving the country.
3.-Numerical Changes in the Population of the Provinces through Natural Increase and Migration 1941-51, 1951-56 and 1956-61

| Province | Natural <br> Increase |  |  | Population Increase according to Census |  |  | Net Migration |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1941-51 | 1951-56 | 1956-61 | 1941-51 | 1851-56 | 1956-61 | 1941-51 | 1951-56 | 1956-61 |
| Nfld. |  | 51,851 | 59.145 |  | 53,858 | 42,779 |  | +1,807 | $-16.366$ |
| P.E.I. | 15.802 | 8,859 | 8,662 | 3,382 | 856 | 5,344 | -12.420 | -8,103 | -3,318 |
| N.S. | 103,512 | ${ }_{63.133}$ | 65,160 | 64,622 | 52.133 | 42,290 | -38,890 | -11,000 | -22,870 |
| N.B. | 99,904 | 59,774 | 59,687 | 58,296 | 38,919 | 43,320 | -41,608 | -20,855 | -16.367 |
| Que. | 736,058 | 476,627 | 521,673 | 723.799 | 572,697 | 630, 833 | -12.259 | +96,070 | $+109.160$ |
| Ont. | 505, 034 | 430.386 | 523,107 | 809, 887 | 807,391 | 831، 159 | $+304.853$ | +377,005 | +308, 052 |
| Man. | 107,510 | 73,684 | 76.008 | 46,797 | 73,499 | 71,646 | -60,713 | -185 | -4,360 |
|  | 135, 106 | 86,030 | 88.294 | -64,264 | 48,937 | 44,516 | -199,370 | -37,093 | -41.778 |
| Alta. | 150.303 | 120,96] | 144,234 | 143,332 | 183,615 | 208.828 | -6.971 | +62,654 | +64,594 |
| B.C. | 116.527 | 98,206 | 125,585 | 347,349 | 233,254 | 230,618 | +230.822 | +135,048 | +105,033 |
| Canadal | 1,972,394 | 1,473,211 | 674,987 | 2,141,358 | 2,471,363 | 2,157,456 | +168,964 | +598,151 | +482,469 |

${ }^{1}$ Includes the Yukon and Northwest Territories.
The earlier movement of population in Canada from east to west has not been apparent since the 1920 s . Although British Columbia has continued to show population gains from migration since 1931, much of this gain has been at the expense of the Prairie Provinces. Although the three Prairie Provinces lost by migration about 267,000 persons between 1941 and 1951, they gained 25,000 in the period 1951-56 and 18,000 in the period 1956-61. Manitoba lost almost 61,000 people between 1941 and 1951 but only 5,000 persons since then. Saskatchewan has been a consistent loser since 1941, losing on the average almost 20,000 a year during the 1940 s and around 8,000 a year during the 1950s. Alberta lost only about 7,000 in the decade 1941-51 and gained close to 65,000 in each of the five-year periods 1951-56 and 1956-61. British Columbia gained through migration at the rate of about 23,000 a year during the 1940 s , about 27,000 a year in the first half of the 1950 s and 21,000 annually in the $1956-61$ period. On an absolute basis, Ontario received more people through migration than did British Columbia but, in relation to its larger population, the gain was only about one third as important. Most of Ontario's growth through migration was from immigration rather than interprovincial movement of population. Quebec had a slight loss between 1941 and 1951 and a considerable gain in the next ten years, due also to immigration. The Maritimes as a whole lost 175,000 persons over the quarter-century.

## Subsection 2.-Density of Population

Table 4 shows the density of population in the different provinces and territories of Canada in the census years 1951, 1956 and 1961. Omitting the Yukon and Northwest Territories where population density is exceedingly low, there were 8.66 persons per square mile in Canada as a whole in 1961 compared with 6.65 per square mile in 1951 . The greatest increase in the ten years was shown by Ontario where there were 4,76 more persons per square mile, followed by Nova Scotia with an increase of 4.62. However, it should be remembered that all provinces with the exception of the Maritimes have large areas almost devoid of population and that concentrations in other areas are very high.

## 4.-Land Area and Density of Population, by Prorince, Census Years 1951, 1956 and 1961

| Province <br> or Territory | Land Area | Population 1951 |  | Population 1966 |  | Population 1961 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Total | Per Sq. Mile | Total | Per 8 g Mile | Total | Per 8 C Mibe |
|  | 99. miles | No. | No. | No. | No. | No. | No. |
| Newfoundland (inel, Labrador) | 143.045 | 361.416 | 2.58 | 415,074 | 2.90 | 457.853 | 3.20 |
| Prince Edward Leland.......... | 2, 184 | 98.429 | 45.07 | 99, 285 | 45.46 | 104.629 | 47.91 |
| New Brunswick. | 20.402 27.835 | 642.584 515.697 | 31.50 18.53 | 694.717 | 34.05 | 737,007 | 36.12 |
| Quebec..... | 523,860 | ¢ 4.055 .681 | ${ }_{7}^{18.74}$ | $\begin{array}{r}\text { 4,64. } \\ 4.6288 \\ \hline\end{array}$ | ${ }_{8} 8.84$ | 5, 597.211 | 21.48 10 |
| Ontario. | 344,082 | 4,597.542 | 13.36 | 5,404,933 | 15.71 | 6,236.992 | 18.12 |
| Manitobs | 211,775 | ${ }^{7} 76.541$ | 3.67 | . 850.040 | 4.01 | 921.686 | 4.35 |
| Saskatchewan | 220,182 | 831,728 | 3.78 | 880,665 | 4.00 | 925.181 | 4.20 |
| Alberts. | 248,800 | 939,501 | 3.78 | 1,123,118 | 4.51 | 1,331,944 | 5.35 |
| British Columbia | 359. 279 | 1.165.210 | 3.24 | 1,398,464 | 3.89 | 1,629,082 | 4.53 |
| Canada (Inclusive of the Territorles) | 2,101,454 | 13,384,324 | 6.65 | 16,049,268 | 7.64 | 18,20t,621 | 8.66 |
| Yukon Territory., | 205.346 | 9,096 | 0.04 | 12.190 | 0.06 | 14,628 | 0.07 |
| Northweat Territories. | 1,253.438 | 16.004 | 0.01 | 19,813 | 0.02 | 22.998 | 0.02 |
| Canada | 3,560,238 | 14,*09,423 | 3.93 | 16,080,791 | 4.52 | 18,238,247 | 5.12 |

The density of each county and census division is given in DBS Census Report 1.1-11 (Catalogue No. 92-540); the density in each of the five largest metropolitan areas in 1951 and 1961 was as follows:-

| Metropolitan Area | 1951 |  | 1981 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Population | $\begin{gathered} \text { Density } \\ \text { per } \\ \text { Sq. Mile } \end{gathered}$ | Population | $\begin{aligned} & \text { Density } \\ & \text { pqer } \end{aligned}$ |
|  | No. | No. | No. | No. |
| Montreal- |  |  |  |  |
| City proper. | 1,021.520 | 20,268 | 1,191,062 | 25,256 |
| Fringe srea. | 450,331 | 2,754 | 918.447 | 2,057 |
| Toronto- 675.754 |  |  |  |  |
| City proper. | 675.754 | 19,374 | 672,407 | 19,234 |
| Fringe area. | 534,599 | 2,583 | 1,152,074 | 1,493 |
| Vancouver- |  |  |  |  |
| City proper. | 344,833 | 7,891 | 384,522 | 8,298 |
| Fringe ares. | 217,127 | 767 | 405, 643 | 872 |
| Winniper- 225.710 |  |  |  |  |
| City proper. | 235,710 | 9,428 | 265,429 210.560 | 10.803 879 |
| Fringe area., | 121,103 | 645 | 210.560 | 878 |
| Ottawa- 200.045 |  |  |  |  |
| Fiting proper... | 202,045 90,431 | 1,446 <br> 2,475 | 181,544 | ${ }_{3} 88$ |

## Subsection 3.-Rural and Urban Population

For the 1961 Census, all cities, towns and villages of 1,000 or more population, whether incorporated or not, were classed as urban; also classed as urban were the urbanized fringes of census metropolitan and other large urban areas, and the urbanized fringes of certain smaller cities where the city and fringe totalled 10,000 or more persons. The remainder of the population was classed as rural.

Table 5 classifies the 1961 rural population according to farm and non-farm residence and the urban population by size groups; in the latter classification, each municipality (or part) in an urbanized area is allocated to the same size group as the total urbanized area of which it forms a part. The figures show that, in 1961, almost 70 p.c. of Canada's population were urban dwellers and 53 p.c. lived in or on the fringes of urban centres having a population of 30,000 or more. Only about 12 p.c. lived on farms.
5.-Rural Population classified as Farm and Non-farm, and Urban Population classified by Size Group, by Province, Census 1961

| Province or Territory | Raral |  |  | Urbsan |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Farm' | Nonfarm | Total | $\begin{aligned} & 1,000 \\ & \text { to } \\ & 9,999 \end{aligned}$ | $\begin{gathered} 10,000 \\ \text { to } \\ 29,999 \end{gathered}$ | $\begin{gathered} 30,000 \\ \text { to } \\ 99,999 \end{gathered}$ | $\begin{gathered} 100,000 \\ \text { or } \\ \text { Over } \end{gathered}$ | Total |
|  | No. | No. | No. | No. | No. | No. | No. | No. |
| Newfoundland. ..... | 9,077 | 216.756 | 225,833 | 98.614 | 48,214 | 85,192 | 二 | 232,020 |
| Prince Edward Islatd | 34,514 | 36.206 | 70,720 | 15, 591 | 18,318 |  | 275 ${ }^{\text {204 }}$ | 33,909 |
| Nova Scotia.... | 56, 832 | ${ }^{279}$ 27663 | 336,495 | 75.163 | 49,035 | 155 911 | 276,284 | 400,512 |
| New Brunswick | 62, 265 | 257, 658 | -319,923 | 80.287 6035 | 81,815 | 185.911 | - | 278,013 |
| Quebec. | 564,826 505,699 | 787,981 906,864 | 1,352,807 | $60 \hat{3} .355$ 631.870 | 277,549 297.834 | 381,628 934,870 | ${ }_{2}^{2,637.872}$ | $3,905,404$ $4,822,529$ |
| Manitobs | 171,472 | 161, 407 | - 332.879 | 71,995 | 51,100 | - ${ }^{\text {a }}$, | -465,712 | -588,807 |
| Saskatehewan | 304, 672 | 222,418 | 527.090 | 109.076 | 48,142 | 128,732 | 112,141 | 398,091 |
| Alberts. | 285, 823 | 202,910 | 488.733 | 158,319 | 44,096 | 36,454 | 605.342 | 843.211 |
| British Columbie. . . . | 77,540 | 369,617 | 447.157 | 161,25B | 152,978 |  | 887,691 | 1,181,925 |
| Yorthweat Territories. | 47 18 | $\begin{array}{r}\text { 9, } \\ 14,050 \\ \hline\end{array}$ | 9,507 14,060 | 5,031 8,938 | - | - | 二 | 5,031 8,938 |
| Canada. | 2,072,785 | 3,465,078 | 5,537,857 | 2,022,495 | 1,049,111 | 1,704,787 | 7,923,997 | 12,700,390 |

t Excludes 55,615 persons living on farms in localities classed as urban.

## Subsection 4.-Populations of Incorporated Cities, Towns and Villages and of Metropolitan Areas

The population of all incorporated cities, towns and villages is classified by size group in Table 6 for the census years 1951, 1956 and 1961. During the ten-year period, the number of such centres increased by 178 and the proportion of the total population living in them rose from 56.7 p.c. to 60.7 p.c. Although there was a slight decrease in the number of centres having fewer than 1,000 persons, the number with over 50,000 increased from 19 to 29 and the proportion of the total population in these larger centres went up from 27.5 p.c. to 29.0 p.c.; the proportion in centres of from 1,000 to 50,000 increased from 26.1 p.c. to 29.3 p.c. in the same comparison.
6.-Populations of Incorporated Cities, Towns and Villages, classified by Size Group, Census Years 1951, 1856 and 1961

| Size Group | 1951 |  |  | 1956 |  |  | 1961 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Incot. porated Centres | Popalation | P.C. of Total PopaLation | Incorporated Centres | Population | P.C. of Total Population | Incorporated Centres | ( Popu- | P.C. of <br> Total <br> Popu- <br> lation |
| Over 500,000... | No. | $\begin{gathered} \text { No. } \\ 1,697,274 \end{gathered}$ | 12.1 | No. | No. $1,777,145$ | 11.1 | No. | $\begin{gathered} \text { No. } \\ 1,863,469 \end{gathered}$ | 10.2 |
| Between400,090 and 500,000 .. |  | - | - | - | - |  | - | - | - |
| 300,000 and $400.000 .$. | 1 | 344.833 | 2.5 | 1. | 365, 844 | 2.3 | 1 | 384, 522 | 2.1 |
| 200,000 and 300,000.. | 3 | 646.076 | 4.6 | 4 | 942.849 | 5.9 | 5 | 1,338,294 | 7.3 |
| 100,000 and 200,000.. | 4 | 572,756 | 4.1 | 4 | 576, 156 | 3.6 | 4 | 568.056 | 3.1 |
| 50,000 and $100.000 .$. | 9 | 588,436 | 4.2 | 12 | 769,323 | 4.8 | 17 | 1,134,214 | 6.2 |
| 25,000 and 50.000. | 24 | 802,380 | 5.7 | 27 | 929,624 | 5.8 | 41 | 1,431,909 | 7.9 |
| 15,000 and 25,000.. | 34 | 636.713 | 4.5 | 43 | 853, 341 | 5.3 | 43 | 862,101 | 4.7 |
| 10,000 and 15,000.. | 29 | 347,410 | 2.5 | 44 | 527, 802 | 3.3 | 61 | 743,474 | 4.1 |
| 5,000 and $10,000$. | 100 | 729.077 | 5.1 | 117 | 830,289 | 5.2 | 132 | 933.936 | 5.1 |
| 3,000 and $5,000$. | 119 | 457.492 | 3.3 | 130 | 497,818 | 3.1 | 151 | 579,201 | 3.2 |
| Under 1,000 and $3,000$. | 409 1,049 | 698,092 429,683 | 5.0 3.1 | 450 +039 | 772.013 443,922 | 4.8 2 | ${ }^{465}$ | 793,465 | 4.4 |
| Under 1,000......... | 1,049 | 429,683 | 3.1 | 1,039 | 443,922 | 2.8 | 1,039 | 437,207 | 2.4 |
| Totals | 1,783 | 77,941,222 | 56.7 | 1,873 | \%,266,126 | 67.7 | 1,961 | 11,068,848 | c0.7 |

The Canadian cities having a population of over 50,000 in 1961 are listed in Table 7. Included also are the years of their incorporation as cities and comparative figures for 1951 and 1956 which are given according to the city boundaries at these respective dates.

## 7.-Incorporated Cities with Populations of Over $\mathbf{5 0 , 0 0 0}$ at the $\mathbf{1 9 6 1}$ Census, with Comparable Data for 1951 and 1956

Note.-The asterisk ( ${ }^{*}$ ) indicates a boundary change since the preceding census. Population totals are based on areas as incorporated at each of these dates.

| City and Province | Year of Incorporation as City | 1951 | 1956 | 1961 |
| :---: | :---: | :---: | :---: | :---: |
|  |  | No. | No. | No. |
| Brantford, Ont. | 1877 | 36,727 | 51,869* | 55, 201* |
| Calgary, Alta. | 1893 | 129,060 | 181,780* | 249,641* |
| Edmonton, Alta. | 1904 | 159,631 | 226,002* | 281,027* |
| Halifax, N.S.. | 1841 | 85,589 | 93,301 | 92,511 |
| Hamilton, Ont. | 1846 | 208,321 | 239,625* | 273,991* |
| Hull, Que. | 1875 | 43,483 | 49,243* | 56,929* |
| Kingston, Ont. | 1846 | 33,459 | 48,618* | 53,526 |
| Kitchener, Ont. | 1912 | 44,867 | 59,562* | 74,485* |
| London, Ont. | 1855 | 95,343 | 101,693* | 169,569** |
| Montreal, Que. | 1832 | 1,021,520 | 1,109,439* | 1,191,062* |
| Oshawa, Ont. | 1924 | 41,545 | 50,412 | 62,415 |
| Ottawa, Ont. | 1855 | 202,045 | 222,129 | 268,206 |
| Quebec, Que. | 1832 | 164,016 | 170,703 | 171,979 |
| Regina, Sask. | 1903 | 71,319 | 89,755* | 112,141* |
| Saint John, N.B. | 1785 | 50,779 | 52,491 | 55,153 |
| St. Catharines, Ont | 1876 | 37,984 | 39,708* | 84,472* |
| St. John's, Nfid. | 1888 | 52,873 | 57,078 | 63,633 |
| St. Michel, Que. | 1952 | 10,539 | 24,706 | 55,978 |
| Sarnia, Ont. | 1914 | 34,697 | 43,447 | 50,976 |
| Saskatoon, Sask. | 1906 | 53,268 | 72, 858** | 95,526* |
| Sherbrooke, Que | 1875 | 50,543 | 58,668* | 66,554 |
| Sudbury, Ont. | 1930 | 42,410 | 46,482 | $80,120{ }^{*}$ |
| Toronto, Ont. | 1834 | 675,754 | 667,706* | 672,407 |
| Trois-Rivières, Que | 1857 | 46,074 | 50,483** | 53,477* |
| Vancouver, B.C. | 1886 | 344, 833 | 365, $844^{*}$ | 384,522 |
| Verdun, Que. | 1912 | 77,391 | 78, 262* | 78,317 |
| Victoria, B.C. | 1862 | 51,331 | 54,584 |  |
| Windsor, Ont... Winnipeg, Man. | 1892 1873 | 120,049 235,710 | 121,980 255,093 | ${ }_{265,429}{ }^{114,367}$ |
| Winnipeg, Man. | 1873 | 235,710 | 255,093* | 265,429 |

Census metropolitan areas have been established for groups of urban communities that are in close economic, geographic and social relationship. Table 8 shows the 1961 population of each area with the corresponding 1951 and 1956 figures for the same area as in 1961. As indicated by the last column, most of these metropolitan areas have shown remarkable increases in population during the decade. In 1961 they accounted for 44.8 p.c. of the total population as compared with 40.2 p.c. in 1951.

## 8.-Populations of Census Metropolitan Areas, 1951, 1956 and 1961

(Areas as of 1961)

| Census Metropolitan Area | 1951 | 1956 | 1961 | $\begin{gathered} \text { P.C. } \\ \text { Increase } \\ 1951-61 \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. |  |
| Calgary, Alta. | 142,315 | 201,022 | 279,062 | 96.1 |
| Edmonton, Alta. | 176,782 | 254,800 | 337,568 | 91.0 |
| Halifax, N.S.. | 133,931 | 164,200 | 183,946 395,189 | 31.3 41.0 |
| Hamilton, Ont. | 107,474 | 128,722 | 154,864 | 44.1 |
| London, Ont. . | 128,977 | 154,453 | 181,283 | 40.6 |
| Montreal, Que. | 1,471,851 | 1,745,001 | 2,109,509 | 43.3 |
| Ottawa, Ont. . | 292,476 | 345,460 | 429,750 | 46.9 |
| Quebec, Que. | 276,242 | 311,604 | 357,568 | 29.4 |
| Saint John, N.B. | 78,337 | 86,015 | 95,563 | 22.0 |
| St. John's, Nfld. | 68,620 | 79,153 | 90,838 | 32.4 |
| Sudbury, Ont. | 73,826 | - 97,945 | $\begin{array}{r}110,694 \\ \hline\end{array}$ | 49.9 50.7 |
| Toronto, Ont.. | $1,210,353$ 561,960 | $1,502,253$ 665,017 | $1,824,481$ 790,165 | 50.6 |
| Victoria, B.C. | 113, 207 | 133,829 | 154,152 | 36.2 |
| Windsor, Ont. | 163,618 | 185, 865 | 193,365 | 18.2 3.4 |
| Winnipeg, Man. | 356,813 | 412,248 | 475,989 | 33.4 |

The 922 incorporated urban centres in Canada having a population of 1,000 or more at the time of the 1961 Census are listed alphabetically by province in Table 9 and their populations given for that year.

## 9.-Incorporated Clities, Towns and Villages having Populations of 1,000 or Over, by Province, Census 1561

Nore.-Urban centres are designated in this tabla by the following abbreviations: c.acity, t. $=$ town, and v . $=$ village.


## 9.-Incorporated Cities, Towns and Vallages having Populations of $\mathbf{1 , 0 0 0}$ or Over,

 by Province, Census 1961-continued

## 9.-Incorporated Cities, Towns and Villages having Populations of $\mathbf{1 , 0 0 0}$ or Over, by Province, Census 1961-continued

| Province and Incorporated Centre | Populiation 1961 <br> Census | Province and Incorporated Centre | Population 1961 <br> Census | Province and Incorporated Centre | Poperlation 1961 Census |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. |  | No. |  | No. |
| Queber-co |  | Quebec-concluded |  | ntarlo-continued |  |
| St. Hilaire, v | 2.911 | Terrebunne, t . | 6.207 | Chalk River, v.... | 1,135 |
| St. Hodore, | 1.0009 | Thetiord Mines, c. | 21.618 | Chatbam, c. | 29.826 |
| St. Hubert, | 14.380 | Thurso, $\mathbf{v}$. | 3.310 | Chelmsiord, t | 2.559 |
| St. Hyacinthe, | 22.354 | Tracy, t.. | 8.171 | Cbestey, t. | 1.697 |
| St. Jacques, | 2.038 | Tring Jonction | 1.214 | Chesterville | 1,248 |
| St. Jean, | 28,988 | Trois Pistoles, | 4.34\% | Chippaws, | 3.256 |
| St. Jean d |  | Trois-Rivieres, | 53.477 | Clinton, t . | 3.491 |
| Boischatel, | 1,576 | Val David, | 1,118 | Cobalt, | 2.209 |
| St. Jean Eudes, v...... | 2,873 | Val d'Or, | 10.983 | Cobourg, | 10,646 |
| St. Jéróme (Lac St. |  | Vallee Jonction, | 1,405 | Cochrane, | 4.521 |
| Jean Co.), v.......... | 1,982 | Valleyfield (Salab |  | Colborne | 1,336 |
| St. Jerome (Terrebonve |  | Vai St, Mich | 27,297 1,290 | Collingwood | 8,385 |
| St. Joseph (Beauce ${ }^{\text {a }}$ |  | Varemes, $\mathbf{v}$. | 2,240 | Copper Clitiot | 3,600 |
| Co.), v... | 2,484 | Verchèree | 1,768 | Cornwall, | 43,639 |
| St. Joseph (\$t |  | Verdun, | 78.317 | Crystal Beach | 1,886 |
| Hyacinthe Co.), v.... | 3.799 | Victorisville, | 18,720 | Deep River, | 5,377 |
| St. Joseph de la |  | Ville Marie, | 1,710 | Delhi, t. | 3,427 |
| Rivière Bleue, V..... | 1.540 3.588 | Villeneuve, Warwick, t | 1,934 2.487 | Deseronto, | 1,797 2,346 |
| St. Jovite, v.. | 2,692 | Waterlo | 4,543 | Dryden, | 5,728 |
| St. Lambert, | 14.581 | Waterville. | 1,330 | Dunda | 12,912 |
| St. Laurent. 0 | 49,805 | Weedon Cents | 1.426 | Dunsville, | 5, 181 |
| St. Leonard de Port |  | Westmount, | 25.012 | Durham, t. | 2,180 |
| 8t. Maure ${ }^{\text {M }}$, | 4,893 | Windso | 6.589 | Eastview, t. ${ }^{2}$ | 24,555 |
| Carrières, | 2.822 | Ya | 1,180 | Elmi | 1, 319 |
| Ste. Marie, 5 | 3.662 |  |  | Elor | 1,486 |
| St. Michel, | 55.978 | Ontario- |  | Englehart | 1,786 |
| 8t. Nod, $v$ | 1,124 | Acton, | 4,144 | Erin, ${ }^{\text {c }}$ | 1,005 |
| St. Pacome, | 1,242 | Ajax, t . | 7.755 | Espadola, | 5,353 |
| St. Pascal, | 2,144 | Alexandris | 2.597 | Essex, t | 3,428 |
| St. Pie, v. | 1,434 | Alifed, v | 1,195 | Exeter, t . | 3,047 |
| St. Pierre, t | 6,795 | Alliston, | 2,884 | Fenelon Falls | 1,359 |
| St. Raphatel, | 1,134 | Almonte, | 3,267 | Fergus, t . | 3,881 |
| St. Raymond. | 3,931 | Amberatburg, | 4.452 | Fonthill, v | $2+324$ |
| St. Redempteur, | 1,035 | Arpprior, t . | 5,474 | Forest, t. | 2.188 |
| St. Rémi, t. | 2,276 | Arthur. | 1,200 | Forest Hill, | 20,489 |
| Ste. Rosalie, | 1.255 | Athens, | 1,015 | Fort Erie, $t$. | 9.027 |
| Ste. Rose, t. | 7.571 | Auro | 8.791 | Fort Frances, | 9.481 |
| St. Ssuveur des |  | Aylme | 4.705 | Fort William, | 45.214 |
| St, Simen, | 1,702 1.197 | Ayt, | 1.016 | Frankiord, v | 1,642 |
| Ste. Thecle, | 2,009 | Barrie | 21,169 |  | 57.830 |
| Ste. Tbêrese | 11,771 | Barry's Bay | 1,439 | Georgetown, | 10,298 |
| St, Timothee, | 1,008 | Beamsville, | 2,537 | Geraldton, | 3,375 |
| St. Tite, t.. | 3,250 | Besverton, | 1,217 | Glencoe. | 1,156 |
| St. Urie, V | 1,021 | Belle River, | 1,854 | Goderich, t | 6,411 |
| St. Vincent de Paul, t... | 11,214 | Belleville, | 30, 655 | Gravenhurst | 3,077 |
| 8t. Zachatie, V.......... | 1,361 | Blenheim, | 3,151 | Grimsby, | 5.148 |
|  | 1.108 2.314 | Blind Riv | 4,093 1,210 | Guelph, | 39,838 2,075 |
| Soheffervilie, | 3,178 | Bolton. | 2,104 | Haileybury, | 2,638 |
| Bcotstown, t . | 1,038 | Bowmanvill | 7.397 | Hamilton, c | 273,991 |
| Senpeterre, | 3.248 | Bracebridge | 2,927 | Hanover, t. | 4,401 |
| Senpeville, | 1.262 | Bradford, | 2,342 | Harriston, | 1,631 |
| Bept Iles, e. | 14, 196 | Brampton, | 18.467 | Harrow, $t$ | 1,787 |
| Stawbridge. | 1.034 | Brantiord, | 55.201 | Havelock, v | 1,260 |
| Shawinigan, S | 32,169 12.683 | Bridgeport, | $\stackrel{1,872}{2}$ | Hawkesbury | 8,661 |
| Shawvile, | 1,534 | Brock vilie, | 17.744 | Hesrst, | 4, 4 , 519 |
| Sherbrooke, | 66.554 | Burlington, | 47,008 | Huntsville, | 3,189 |
| 8illery, c | 14, 109 | Caledonin, | 2,198 | Ingersoll, t . | 6.874 |
| Borel, | 17,147 | Campbelliord | 3,478 | Iroquois, v . | 1,136 |
| Btanhtead Plain, v...... | 1,116 | Cannington, | 1,024 | Iroquois Fall | 1.681 |
| Sutton, V................ | 1,755 | Capreol, t. | 3.003 | Kapuskasing | 6,870 |
| Temisiscamin | ${ }_{2,517}^{1,083}$ | Cardinal, C . | 1,944 | Keewatin, | 2,197 |
|  | 2,965 | Casselman, v. | 1,277 | Kepors, t. | 10,904 |

For flotnoten, see end of table, p. 193.

## 9.-Incorporated Cities, Towns and Villages having Populations of $\mathbf{1 , 0 0 0}$ or Over, by Province, Census 1961-continued

| Province and Incorporated Centre | Population 1961 Cenaus | Province and Incorporated Centre | Population 1961 Census | Province and Incorporated Centre | Popu. lation1961 <br> Census |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. |  | No. |  | No. |
| Ontario-contioued |  | Ontarlo-continued |  | Ontario-concluded |  |
| Kincardine, t.... | 2,841 | Powessan, t | 1,084 | Woodbridge, v | 2,315 |
| Kingston, c.... | 53,526 | Prescott, t . | 5,366 | Woodstock, | 20,486 |
| Kingsville, t | 3.041 | Preston | 11,577 |  |  |
| Kitchener, | 74,485 | Rainy Rive | 1,168 | Manitobo- |  |
| Leakefield, $v$ | 2,167 9,030 | Renichmond, | 8,935 1,215 | Altona, t... | 2.026 |
| Leaside, t... | 18,579 | Richmond Hili, | 18,446 | Beausejour, $\mathbf{t}$ | 1.770 |
| Levack, | 3,178 | Ridgetown, t... | 2,603 | Boissevain, t. | 183 |
| Lindsay, $t$ | 11,399 | Riverside, t . | 18,089 | Brand | 8,166 |
| Listowel, t | 4,002 | Rockcliffe Park, | 2,084 | Carberry | 4.369 |
| Little Curr | 1,527 | Rockland, t. | 3,037 | Carman, t . | 1,113 1.930 |
| Lively, t . | 3,211 | Rodney, $\mathbf{v}$. | 1,041 | Dauph | 7,374 |
| London, c. | 169,569 | St. Catharines, | 84,472 | East Kildonan, | 27,305 |
| Long Brano | 11,039 1.189 | St. Clair Beach, | 1,480 | Flin Flon, t. (Man | 27,305 |
| Lucknow | 1,031 | St. Thomas, | 22,469 | Sask.). | 11,104 |
| Madoc | 1,347 | Sarnia, | 50,976 | Grimli, t. | 1,841 1,057 |
| Markdale. | 1.090 | Sault Ste. M | 43,088 | Gran | 1,729 |
| Marisbam, | 4,294 | Seaforth, $t$. | 2,255 | Melita, | 1.038 |
| Marmora, | 1,381 | Sbelburne, | 1. 239 | Minnedosa | 2,211 |
| Massey, t | 1,324 | Simeoe, | 8,754 | Morden, | 2,793 |
| Mattawi Meaford | 3,314 3,834 | Sioux Look | ${ }_{9}^{2,453}$ | Morris, | 1,370 |
| Midland, | 8,656 | Smooth Rock Fa | 1,131 | Neepawa |  |
| Milton, t . | 5,629 | Southampton, t | 1.818 | Portag | 1,574 |
| Milverton, | 1,111 | South River, $\mathbf{v}$ | 1.044 | Roblin | 1. 368 |
| Mimico ${ }^{\text {t. }}$ | 18.212 | Stayner, t | 1,671 | Russell, | 1,263 |
| Mitchell, $t$. | 2,247 | Stirling | 1.315 | St. Boniface | 37,600 |
| Morrisbure. <br> Mount Fore | ${ }_{2,623}^{1.820}$ | Stoney Cree | 1,5043 | St. Jamea, | 33.977 |
| Napanee, $t$. | 4,500 | Stoufiville, V | 3,188 | Selki | 8.576 1.841 |
| Newcastle, | 1,272 | Stratford, c . | 20,467 | Steinbsi | 1,739 |
| New Hamburg | 2.181 | Stratbroy | 5,150 | Stopewall, | 1,420 |
| New Liskeard, | 4.896 | Streetsvile | 5,056 | Swan River | 3,163 |
| Newmarket, | ${ }^{8} 8.932$ | Sturgeon Fs | 8,288 | The Pas, t | 4,671 |
| New Toronto, | 13.384 | Sudbury, | 80,120 1.470 | Transcoua, | 14, 248 |
| Niagara, | 22.75 | Swange | 9,628 | Tuxedo, t | 1,627 2,708 |
| North Bay, | 23.781 | Tavistock. | 1,232 | West Kildo | 20,077 |
| Norwich, | 1.703 | Tecurnseb, ${ }^{t}$ | 4,476 | Winkler, t. | 2.529 |
| Norwood, | 1.060 | Thamesville, | 1,054 | Winnipeg. | 265,429 |
| Oakvill | 10.366 4.593 | Thessalon, t . | 1,725 | , |  |
| Orillis, t. | 15,345 | Thorold, t . | 8.633 | Saskatehewan- |  |
| Oshawa, | 62,415 | Tilbury, $t$ | 3,680 | Assiniboia, t ., | 2.481 |
| Ottaws, | 268,206. | Tiflsonburg, | 6,600 | Battleford, | 1,627 |
| Owen Sound, | 17,421 | Timmins, | 29,270 | Biggar, t . | 2,702 |
| Palmersto | 1,554 | Toronto, c | 672,407 | Broadview, | 1,008 |
| Paris, t. | 5,820 | Trenton, | 13,183 | Canora, t. | 2,117 |
| Parkhill, | 1.169 | Tweed, v | 1,791 | Creighton, | 1,729 |
| Parry Sound, | 6.004 | Uxbridge, t | 2,316 | Esterhazy, | 1,114 |
| Pembroke | 16.791 | Vankleek Hill | 1,735 | Estevan, c. |  |
| Penetanguishene <br> Perth, t | 5.340 5.360 | Wictoris Harb | 3,851 | Flin Flo |  |
| Petawawa, | 4,509 | Wallaceburg, | 7, 8881 | Fort Qu'Appelle, | 1,521 |
| Peterborough, | 47.185 | Waterdown, v | 1,844 | Gravelbourg | 1.499 |
| Petrolia, t . | 3,708 | Waterford, | 2,221 | Grepfell, t. | 1.250 |
| Piokering, | 1,755 | Waterloo | 21,366 1,293 | Gull Lake, t | 1,038 1.008 |
| Picton, t....... | 4, ${ }^{4} 864$ | Welland, ${ }^{\text {che }}$ | 1,693 36,079 | Hudson Bay | 1,601 |
| Port Arthur, c | 45,276 | Wellington, | 1+064 | Humboldt, t | 3.245 |
| Port Colborne, | 14,886 | West Lorne. | 1,070 | Indian Head, t. | 1,802 |
| Port Credit, | 7,203 | Weston, t. | 9,715 | Kamsack, | 1,988 1.220 |
| Port Dover, | 3 3,664 | Wheatley, | 14,362 | Kerrobert, ${ }_{\text {Kindersley, }}$ |  |
| Port Elgin, | 1,632 8.091 | Whitby, ${ }^{\text {When, }}$ | 14,685 2,138 | Leader, t.. | 1,211 |
| Port Mopent ${ }^{\text {P }}$ Poil | -8,091 | Wiarton, t.. Winchester, | 2,138 1,429 | Leader, t......... | 1,211 |
| Port Perty, | 2,262 | Windsor, | 114,367 | (Sask, and Alta | 5,667 |
| Port Stanley, v | 1,460 | Wingham, t | 2,922 | Maple Creek, t . | 2,291 |

For footnote, see end of table, p. 193.

## 2.-Incorporated Clties, Towns and Villages having Populations of $\mathbf{1 , 0 6 0}$ or Over, by Provinee, Census 1581-concluded

| Province and Incorporated Centre | Population 1961 Census | Province and Incorporated Centre | Population 1961 Census | Provioce and Incorporated Centre | Population 1901 Census |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. |  | No. |  | No. |
| Saslcatcheman- |  | Alberta-concluded Grande Prairie, | 8,352 | British CoIumblaconcluded |  |
| Meadow Lak | 2,803 | Grimshaw, t... | 1.095 | Creston, V . | 2,400 |
| Meffort, $\mathbf{t}$.. | 4,039 | Henna, t.... | 2.645 | Cumberland, $v$ | 1.303 |
| Melville, $\mathbf{c}$ | 5,191 | High Prairie, t | 1,756 | Dawron Creek, | 10,946 |
| Mocese Jsw, | 33,206 | High River, t. | 2.276 | Duncan, c.. | 3,728 |
| Mocemin, | 1.781 | Hinton, t... | 3,529 | Enderby, 0 | 1,075 |
| Nipawin, t . | 3,886 | Tnnisfail, | 2,270 | Fernie, c. | 2,661 |
| North Battleford, | 11,230 1 1840 | Jasper Place | 30,530 1,314 | Fort St. James, | 1,081 |
| Ozbow | 1,359 | Lacombe, $t$. | 3,029 | Fruitvale | 1,032 |
| Prince Albert, c | 24,168 | Leduc, t. | 2,356 | Gibson's Landing, | 1,091 |
| Radrille, t...... | 1,067 | Iethbridge, c. | 35,454 | Golden, $\mathrm{v} . . . . .$. | 1,776 |
| Regina, c. | 112.141 | Lloydminster, c |  | Grand Forks, | 2,347 |
| Rosetown, | 2.450 | Magrath, t. | 1.338 | Hope, V . | 2,751 |
| Rosthern, t . | 1,264 | McLennan, t. | 1,078 | Kamloops, | 10,076 |
| Baskatoon, | 95,526 | McMuray, | 1,386 | Kelowna, c . | 13,188 |
| Shamnavon, | 2.154 | Medicine Hat, | 24,484 5 5,077 | Kimberiey, | 6.013 2.123 |
| Shellbrook, t | 12,188 | Montgomery, | 5,077 | Ladysmith, | 2,173 |
| Tisdale, $t$. | 2,402 | Okotoks, t | 1.043 | Lake Cowichan, | 2.149 |
| Unity, t . | t,992 | Olds, t . | 2.433 | Langley, | 2,365 |
| Wadena, | 1,311 | Peace River, | 2,543 | Lillooet, v . | 1,304 |
| Watrous, | 1,461 | Pincher Creek, | 2,961 | Marysvilie, | 1.057 |
| Weyburn, | 9,101 | Potioka, t . | 3,938 | Merritt, $\mathbf{y}$ | 3,039 |
| Willcie, t. | 1,612 | Provost, | 1,022 | Mission City, | 3,251 |
| Woleeley, $t$ | 1,031 | Raymond. | ${ }_{2}^{2,362}$ | Nanaimo, | 14,135 |
| Wynyard, | 1,686 9,995 | Redclifer, | 2,281 19,812 | Nelson, Westmini.... | 33,654 |
|  |  | Redwater, | 1,135 | North Kamloops, | 6,456 |
| Alberta- |  | Rimbey, t. | 1,266 | North Vancouver, | 23,656 |
| Athabseca, t | 1.487 | Rocky Mountain |  | Oliver, v | 1,774 |
| Barchesd, | 2,286 | Honse, t. | 2,380 | Osoyoos, | 1,022 |
| Bellevue, $\mathbf{v}$ | 1.323 | St. Albert, | 4,059 | Parknv | 13,859 |
| Black Diamo | 1,043 | Stettler, t. | 3,638 | Port Alberni, e . | 11,560 |
| Blairmore, t | 1,980 | Stony Plain, $t$ | 1,311 | Port Coquitlam, | 8, 111 |
| Boanyville, | 1,736 | Sylvan Lake, t . | 1,381 | Port Moody, e. | 4,789 |
| Bow islan | 1,122 | Taber, t . | 3,851 | Prince George, c. | 13,877 |
| Bowness, t | 9,184 | Three Hills | 1,491 | Prince Rupert, $\mathbf{P}$ Princeton, | 11,987 |
| Crooks, | 249,541 | Valleyvil | 2,908 | Quesnel, | 4,673 |
| Camrose, | 6,939 | Vermilion, | 2,449 | Revelatoke, | 3,624 |
| Cardston, t | 2,801 | Viking, t . | 1,043 | Rosslatd, | 4,384 |
| Castor, t. | 1,025 | Vulcan, | 1,310 | Salmon Arm, | 1,506 |
| Claresholm | 2,143 | Wainwright, | 3,351 | Sidney, v. | 1,558 |
| Coaldale, | 2,592 | Westlock, | 1,838 | Smithers, V | 2,487 |
| Cold Lake, | 1,307 | Wetaskiwin, | 5,300 | Squamish, v | 1,557 |
| Coleman, <br> Devon. | 1,713 1,418 | Whitecou | 1.054 | Trail, c.... | - $311+580$ |
| Didsbury | 1,254 | British Columbla- |  | Vanderboot. | 1,450 |
| Drayton $\mathrm{Vall}^{\text {a }}$ y | 3,854 | Alberni, c... | 4,616 | Vernon, c. | 10,250 |
| Drumheiler, | 2,931 | Armstrong, 0 | 1,288 | Victoris, | 54,941 |
| Edmontor, | 281,027 | Barns Lake. | 1,041 | Warfield, | 2,212 |
| Fairview, | 3,198 1,506 | Campbell River, | 3.737 | White Rock, c. Wiliams Lake, $v$. | 6,483 2,120 |
| Forest Law | 12,263 | Chilliwack, | 8.259 |  |  |
| Fort Macleod, t | 2,490 | Comox, | 1,756 |  |  |
| Fort 8askatchewa | 2,972 | Courtenay | 3,485 | Yukon Territory - |  |
| Grand Centre, t .. | 1,493 | Cranbrook, c.. | 5,549 | Whitehoree, c... | 5,031 |



## Subsection 5.-Sex and Age Distribution

The sex and age distributions of a population are basic to most, if not all, other analyses, as they influence employment, marriage, birth and death rates and a multitude of other factors that are of great importance in the national life.

Sex.-The Canadian population has always been characterized by an excess of males, although this excess has been greatly modified in recent years. Since Confederation, the peak sex ratio for Canada as a whole was 113 reached in 1911, a census year that fell within a period of heavy immigration; the 1961 ratio was 102. In the older settled provinces east of Manitoba, the ratio varied between 104 in 1911 and 101 in 1961 but in the western provinces which were being opened to settlement in the early years of the century the ratio changed from a high of 146 in 1911 to 105 in 1961.

The sex distributions and variations in ratio among the provinces are given for the census years 1951, 1956 and 1961 in Table 10.

## 10.--Sex Distribution of the Population and Sex Ratio, by Province, Census Years 1951, 1956 and 1961

| Provinee or Territory | 1951 |  |  | 1956 |  |  | 1981 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Males | Females | $\left\|\begin{array}{c} \text { Males } \\ \text { to } 100 \\ \text { Females } \end{array}\right\|$ | Males | Females | $\left\|\begin{array}{c} \text { Males } \\ \text { to } 100 \\ \text { Females } \end{array}\right\|$ | Males | Females | $\left\lvert\, \begin{gathered} \text { Males } \\ \text { to } 100 \\ \text { Females } \end{gathered}\right.$ |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| Nfid. | 185, 143 | 176, 273 | 105 | 213,905 | 201,189 | 106 | 234,924 | 222,929 | 105 |
| P.E.I. | 60,218 | 48,211 | 104 | 50,510 | 48,775 | 104 | 53,357 | 51,272 | 104 |
| N.S. | 324.955 | 317,629 | 102 | 358,182 | 341.535 | 103 | 374, 244 | 362,763 | 103 |
| N.B. | 259,211 | 256,486 | 101 | 279,590 | 275,026 | 102 | 302,440 | 295,406 | 102 |
| Que. | 2,022,127 | 2,033,554 | 99 | 2,317,677 | 2,310,701 | 100 | 2,631,856 | 2,627,355 | 100 |
| Ont.. | 2,314,170 | 2, 283, 372 | 101 | 2,721,518 | 2,683,414 | 101 | 3,134,528 | 3,101,564 | 101 |
| Man. | 394,818 | 381,723 | 103 | 432,478 | 417,582 | 104 | 468,503 | 458,183 | 108 |
| Sask. | 434,568 | 397,180 | 109 | 458,428 | 422,237 | 109 | 479,564 | 445, 617 | 108 |
| Alta. | 492,192 | 447,309 | 110 | 585, 921 | 537,185 | 109 | 689,383 | 842,581 | 107 |
| B.C. | 596,961 | 568, 249 | 105 | 720,516 | 677,948 | 106 | 829,094 | 799,988 | 104 |
| Y.T... | 5,457 | 3,639 | 150 | 6.924 | 5,266 | 131 | 8,178 | 6,450 | 127 |
| N.W.T. | 9,053 | 6,951 | 130 | 11,229 | 8,084 | 139 | 12,822 | 10,776 | 126 |
| Cauad | 7,088,873 | 6,320,556 | 162 | 8,151,87\% | 7,528,912 | 103 | 3,218,893 | 9,019,354 | 10\% |

Age.-Recent trends in vital rates and immigration have had a considerable effect on the age composition of the Canadian people. A high birth rate together with a low death rate among children added nearly $2,000,000$ to the number of persons under 15 years of age between 1951 and 1961, an increase of 46 p.c. The proportion of this group to the total population increased from 30.3 p.c. to 34.0 p.c. in the ten-year period. The population of working age-those of 15 to 64 years of age-increased more slowly at 22.9 p.c. in the decade and the relative proportion of this group declined from 61.9 p.c. to 58.4 p.c. Without the influence of immigration in the 1951-61 period, the proportion of this group would have been much lower since a large part of it consisted of persons born in the low birth rate period of the 1930s. The proportion of persons 65 years of age or over in 1961 was 7.6 p.c. compared with 7.8 p.c. in 1951.

Table 11 shows the population of Canada classified by five-year age groups and by sex for the census years 1951, 1956 and 1961. The provincial distribution by specified age group is given for 1961 in Table 12.
11.-Male and Female Populations, by Age Group, Census Years 1951, 1956 and $18 \$ 1$

| Age Group | 1951 |  | 1956 |  | 1961 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Male | Female | Male | Female | Male | Femate |
|  | No. | No. | No. | No. | No. | No. |
| 5- 4 years. | 879,063 713,873 | 843,046 683,952 | 1,011, 835 $\mathbf{9 1 9 , 9 5 2}$ | 971,728 887,101 | $1,154,091$ $1,063,840$ | $1,102,310$ $1,015,682$ |
| 10.14 | 575,122 | 555, 661 | 732,032 | 702,562 | -948,160 | 1,907,839 |
| 15-19 | 532.180 | 525,792 | 586, 635 | 575,866 | 729.035 | 703,524 |
| 20-24 | 537,535 | 551, 106 | 567,179 | 561,931 | 587,139 | 596,507 |
| 25-29 " | 552,812 | 578,403 | 305,836 | 592,301 | 613,897 | 595.400 |
| 30-34 | 512,557 | 530, 177 | 602,535 | 613,750 | 644,407 | 627, 403 |
| 35 - 39 | 503,571 | 495,562 | 555,763 | 558,622 | 631,072 | 639, 852 |
| 40-44 | 445,800 | 422,767 | 522,615 | 502,784 | 559,996 | 558,965 |
| 45-49 \# | 387,708 | 356.971 | 455,827 | 422.988 | 515,516 | 499,800 |
| 50.54 " | 340.461 | 322,185 | 381, 835 | 351,215 | 442,909 | 420.279 |
| $55-50$ | 292,564 | 278,126 | 321,973 | 307,271 | 362.145 | 343,690 |
| 60-64 | 284,324 | 241,828 | 265, 652 | 259,265 | 292,569 | 291,066 |
| $65 \cdot 69$ - | 228,076 | 205, 421 | 237, 551 | 220, 562 | 239,685 | 247,417 |
| 70.74 | 160.398 | 154,674 | 187, 490 | 183.218 | 196,078 | 206,099 |
| 75-79 | 94, 130 | 94,261 | 113,560 | $113+948$ | 134,186 | 140,051 |
| 80-84 | 45.963 | 50.828 | 55,638 | 61.460 | 69.046 | 77,771 |
| 85.89 | 17,539 | 22,060 | 21,688 | 26,670 | 27,178 | 33 ,608 |
| 90 years or over | 5,197 | 7,726 | 6,295 | 9,870 | 7,946 | 12,093 |
| Teta | 7,488,873 | 6,920,556 | 8,151,879 | 7,528,912 | 9,218,893 | 9,019,354 |

12.-Age Distribution of the Population, by Province, Census 1561

| Province or Territory | $\begin{aligned} & 0-4 \\ & \text { Years } \end{aligned}$ | $\stackrel{5-9}{\mathbf{Y e a r s}^{2}}$ | $\begin{aligned} & 10-14 \\ & \text { Years } \end{aligned}$ | $\begin{aligned} & 15-19 \\ & \text { Years } \end{aligned}$ | $\frac{20-24}{\text { Хеагя }^{2}}$ | $\begin{aligned} & 25-34 \\ & \text { Years } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. |
| Newfoundland. | 67,695 | 64,404 | 59.464 | 43.829 | 30.238 | 52,290 |
| Prince Edward İland. | 13,221 | 12,216 | 12.264 | 8,875 | 6.344 | 11,049 |
| Nova Seotia. | 91,239 | 84.760 | 80.329 | 64,239 | 49,311 | 87,316 |
| New Brunswick | 78,560 | 75,882 | 72.745 | 53,514 | 37. 419 | 67,477 |
| Quebec. | 671,256 | 624,074 | 568.065 | 467,426 | 369,633 | 735,825 |
| Ontario. | 740,193 | 674,519 | 503,037 | 436,883 | 386,966 | 882,476 |
| Manitoba | 107,574 | 101,382 | 91, 150 | 70,808 | 59,007 | 117,817 |
| Saskatchewan | 113. 755 | 106, 886 | 94, 273 | 72,864 | 56. 996 | 113,566 |
| Alberta | 179.888 | 159.053 | 130,383 | 99,004 | 89.154 | 192,571 |
| British Columbi | 186, 793 | 171,681 | 150,689 | 112,653 | 95,230 | 214,269 |
| Yukon Territory | 2.337 | 1.761 | 1,187 | 765 | 1,109 | 2.956 |
| Northwest Territories | 3,890 | 2,924 | 2,413 | 1,699 | 2,239 | 4,005 |
| Canada. | 2,256,401 | 2,073,583 | 1,855,598 | 1,432,559 | 1,153,446 | 2,481,10\% |
|  | $\begin{aligned} & 35-44 \\ & \text { Years } \end{aligned}$ | $\begin{aligned} & \text { 45-54 } \\ & \text { Years } \end{aligned}$ | $\begin{aligned} & 55-64 \\ & \text { Years } \end{aligned}$ | $\begin{aligned} & \text { 65-69 } \\ & \text { Years } \end{aligned}$ | $\begin{aligned} & 70+ \\ & \text { Years } \end{aligned}$ | Total |
|  | No. | No. | No. | No. | No. | No. |
| Newfoundland. | 48,984 | 38,343 | 24.731 | 9,684 | 17,211 | 457.853 |
| Prinee Edward Island | 11,407 | 10,501 | 7.822 | 3,582 | 7,348 | 104, 629 |
| Nova Scotia. | 89,618 | 75,88! | 50.897 | 21,341 | 42.076 | 737.007 |
| New Brunswie | 69.809 | 56,676 | 38,987 | 16,216 | 30.701 | 597,936 |
| Ouebee. | 685.734 | 511.334 | 339,563 | 116,923 | 189,378 | \$,259, 211 |
| Ontario. | 866.563 | 670,544 | 476,838 | 180,063 | 328.010 | 6,236,092 |
| Manitoba | 120, 774 | 100,500 | 69,886 | 28, 169 | 55. 119 | 921,688 |
| Saskatchewan | 115,833 | 97.430 | 68,018 | 28,208 | 57,362 | 925,181 |
| Alberta. | 172, 623 | 128,547 | 87,643 | 31,724 | 61,354 | 1,331,944 |
| British Columbia | 223,813 | 184,823 | 123,535 | 50,752 | 114.864 | 1,629.082 |
| Yukon Territory | 2,118 | 1.243 | 677 | 180 | 295 | 14,628 |
| Northwent Territories. | 2,829 | 1,682 | 923 | 260 | 334 | 22,988 |
| Canada | 2,383,886 | 1,878,504 | 1,289,470 | 487,102 | 304,052 | 18,288,247 |

## Subsection 6．－Marital Status

After age and sex，marital status analysis is probably next in importance from a vital， economic and social viewpoint．The number of married females between 15 and 45 years of age is a most significant factor in the fertility of a population．If the proportion of females in this group is Iow，the expected birth rate will be low．In 1961， 62.9 p．e．of all married females were in the $15-44$ age group compared with 64.0 p．c．in $1951,61.2$ p．c．in 1941 and 63.5 p．e．in 1931.

The high birth rate in the 1951－61 period，besides having a notable effect on the general population growth and age composition，has been an influence on the 32.7 －p．c．increase in the single population．During the same period，the married population increased by 28.2 p．c．and the widowed by 21.0 p．c．Other striking features are the excess of married males （largely consisting of male immigrants whose wives had not yet joined them）and the great preponderance of widows over widowers．

The marital status of the population in 1961 is shown in Table 13.
13．－Marital Status of the Population，by Age Group and Sex，Census 1961

| Age Group and Sex | Single | Married | Widowed | Divorced | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No． | No． | No． | No． | No． |
| Under 15 years．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． $\mathrm{F}_{\mathbf{F} \text { ．}}$ | $3,166,091$ $3,025,831$ | － | － | $\cdots$ | $3,166,091$ $3,025,831$ |
| T． | B，191，922 | 二 | 二 | － | 8，191，922 |
| 15－19＂$\ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots$ M． | 719,727 642,007 | 9,198 61.197 | 88 282 | 22 | 729.035 703,524 |
| $\underset{\mathrm{T}}{\mathrm{F}}$ | 819，7207 $1,361,734$ | 61,197 70,395 | 350 | 88 | 1，432，559 |
| 20－24 4．．．．．．．．．．．．．．．．．．．．．．．．．．．．M． | 408，005 | 178，618 | 233 | 283 | 587，139 |
| 䢕 | 241， 435 | 353，215 | 931 | 926 | 596，507 |
| T． | 649，440 | 531，833 | 1，164 | 1，209 | 1．183，646 |
| 25－34＊．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | 293，298 | 959，702 | 1，864 | 3，440 | 1，258， 304 |
| F． | 158，119 | 1，051，198 | 7，407 | 6，079 | 1，222，803 |
| T． | 451，417 | 2，010，900 | 9，271 | 9，519 | 2．481， 107 |
|  | 143，174 | 1，034，645 | 7，527 | 5.722 | 1，191，068 |
| F． | 108，573 | 1．052，760 | 28，258 | 9.226 | 1，198．817 |
| T． | 251， 747 | 2，087，405 | 35，785 | 14，948 | 2，889，885 |
| 45－54＂．．．．．．．．．．．．．．．．．．．．．．．．．．．．M． | 100，426 | 834，787 | 17，128 | 6.084 | 958，425 |
| F． | 91，012 | 751，129 | 69， 415 | 8，523 | 1920，079 |
| T． |  | 1，585，916 | 86，543 | 14，607 | 1，878，504 |
|  |  |  |  |  |  |
| 为 $\mathbf{F}_{\text {F }}$ | $65,697$ | 439， 436 | 125． 540 | 4，083 |  |
| T． | 140， 054 | 980，370 |  | 8，116 |  |
| 65－69＂．．．．．．．．．．．．．．．．．．．．．．．．．．．．． $\mathrm{M}^{\text {．}}$ | 26，251 | 185， 739 | 20.516 |  | 239.685 |
| 夈 | 25，019 | 136， 833 | 84，579 | ， 888 | 247，417 |
| T． | 51，270 | 322，672 | 111，095 | 2，065 | 487， 102 |
| 70 years or over． | 46，235 | 276， 102 | 110，761 | 1，334 | 434，432 |
|  | 47，871 | 158，714 | 262，324 | 714 | 469，620 |
|  | 94，106 | 434，813 | 373，085 | 2.048 | 904，052 |
|  | 4，977，564 | 4，019，725 | 199，507 | 22，497 | 3，218，893 |
|  | 4，405，564 | 4，014，579 | 678，714 | 30，495 | 8，019，244 |
|  | 9，383，128 | 8，024，304 | 778，223 | 52，592 | 18，238，247 |

## Subsection 7．－Ethnic Groups and Birthplaces

Ethnic Groups．－A population made up of diverse ethnic groups gives rise to political， social and economic problems quite different in nature from those of one with a more homogeneous ethnic composition．These problems are mitigated，however，to the extent
that certain groups are more easily integrated than others. It is equally true that the different backgrounds of various ethnic groups lend variety and diversity to the national life.

The two basic groups in the Canadian population are the French and British Isles ethnic groups. The influence of the French in Canada covers a longer period and, with the exception of the 1921 Census, this group has always exceeded in number any of the components of the British Isles ethnic group.

In 1961, each person was asked the question: "To what ethnic or cultural group did you or your ancestor (on the male side) belong on coming to this Continent?" The language spoken at the time by the person, or his paternal ancestor, was used as an aid in determining the person's ethnic group. The classification is given for 1961 in Table 14 with comparative figures for 1951 and 1941. Information on ethnic group was not collected in the 1956 Census.
14.-Distribution of the Population by Ethnic Group, Census Years 1941, 1951 and 1961

| Ethnic Group | 19411 | 1951 | 1961 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | p.c. |
| British Isles. | 5,715,904 | 6,709,685 | 7,996,669 | 43.8 |
| English. | 2,968,402 | 3,630,344 | 4,195, 175 | 23.0 |
| Irish.. | 1,267,702 | 1,439,635 | 1,753,351 | 9.6 |
| Scottish. | 1,403,974 | 1,547,470 | 1,902,302 | 10.4 |
| Other... | 75,826 | 92,236 | 145,841 | 0.8 |
| Other European. | 5,526,964 | 6,872,889 | 9,657,195 | 53.0 |
| Austrian...... | 37,715 | 32,231 | 106,535 | 0.6 |
| Belgian. | 29,711 | 35,148 | 61,382 | 0.3 |
| Czech and Slovak | 42,912 | 63,959 | 73,061 | 0.4 |
| Danish. | 37,439 | 42,671 | 85,473 | 0.5 |
| Finnish. | 41,683 | 43,745 | 59,436 | 0.3 |
| French. | 3,483, 038 | 4,319,167 | 5,540,346 | 30.4 |
| German | 464,682 | 619,995 | 1,049,599 | 5.8 |
| Greek. | 11,692 | 13,966 | 56,475 | 0.3 |
| Hungarian. | 54,598 | 60,460 | 126,220 | 0.7 |
| Icelandic.. | 21,050 | 23,307 | 30,623 | 0.2 |
| Italian. | 112,625 | 152,245 | 459,351 | 2.5 |
| Jewish. | 170,241 | 181,670 | 173,344 | 1.0 |
| Lithuanian. | 7,789 | 16,224 | 27,629 | 0.2 |
| Netherlands | 212,863 | 264, 267 | 429,679 | 2.4 |
| Norwegian. | 100.718 | 119,266 | 148,681 | 0.8 |
| Polish. | 167,485 | 219,845 | 323,517 | 1.8 |
| Romanian. | 24,689 | 23,601 | 43,805 | 0.2 |
| Russian. | 83,708 | 91,279 | 119, 168 | 0.7 |
| Swedish. | 85,396 | 97,780 | 121,757 | 0.7 |
| Ukrainian. | 305,929 | 395,043 | 473,337 | 2.6 |
| Yugoslavic | 21, 214 | 21,404 | 68,587 | 0.4 |
| Other...... | 9,787 | 35,616 | 88,190 | 0.5 |
| Asiatic. | 74,064 |  | 121,753 | 0.7 |
| Chinese | 34,627 | 32,528 | 58,197 | 0.3 |
| Japanese | 23,149 | 21,663 | 29,157 | 0.2 |
| Other. | 16,288 | 18,636 | 34,399 | 0.2 |
| Other Origin. | 189,723 | 354,028 | 462,630 | 2.5 |
| Native Indian and Eskimo | 125,521 | 165,607 | 220,121 | 1.2 |
| Negro.............. | 22,174 | 18,020 | 32,127 | 0.2 |
| Other and not stated. | 42,0282 | 170,401 | 210,382 | 1.2 |

[^61]Birthplaces.-Table 15 gives the total population of Canada classified by country of birth for the census years 1941, 1951 and 1961, and Table 16 shows the province of birth of Canadian-born persons for the same years. For immigrants, the country of birth was recorded according to boundaries existing at the date of the census. Information on birthplaces was not collected in the 1956 Census.

## 15.-Country of Birth of the Population, Census Years 1941, 1951 and 1961



[^62]16.-Province of Birth of Canadian-Born Persons, Census Years 1941, 1351 and 1961

| Province | 1941 | 1951 | 1961 | Province or Territory | 1941 | 1951 | 1964 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. |  | No. | No. | No. |
| Nfld. |  | 397,823 | 497, 591 | Sask. . . .......... | 867, 832 | 817,404 | 1,030.755 |
| P.E.I. | 108,423 | 117.310 | 130, 123 | Alta. | 479.098 | 649,594 | 965, 425 |
| N.S. | 568,797 | 660,150 549 | 783,848 655066 |  | 335,554 12,267 | 614,851 16.654 | 843.596 26.028 |
| N.B. | 3. 463,127 | 3 549,984 | 655,066 $4,916,024$ | Yukon and N.W.T. | 12,267 | 16,654 | 26,028 |
| Ont. | 3, 123, 870,349 | $3,645,074$ 699,587 | 4,667,159 $\mathbf{8 7 8 , 3 6 9}$ | Canada | 9,487, 8081 | 11,949,518 | 15,398,984 |

${ }^{1}$ Includes persong born in Canada whose province of birth was not stated.

## Subsection 8.-Religious Denominations

In the 1961 Census, enumerators were instructed to record the specific religious body, denomination, sect or community reported in answer to the question: "What is your religion?" Thus it should be noted that census figures do not measure church membership or indicate the degree of affiliation with any religious body As shown in Table 17, close to eight out of ten persons in Canada stated that they belonged to one of the three numerically largest denominations-Roman Catholic, United Church and Anglican-in 1961. The table gives comparative figures for the census years 1941 and 1951; this information was not collected in the 1956 Census.
17.-Principal Religious Denominations of the Population, Census Years 1941, 1951 and 1961

| Religious Denomination | 1941 | 1951 | 1961 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | p.c. |
| Adventist. | 18,485 | 21,398 | 25,999 | 0.1 |
| Anglican Chureh of Canada | 1,754,368 | 2,060,720 | 2,409,068 | 13.2 |
| Baptiot. | 484, 465 | 519,585 | 593,553 | 3.3 |
| Greek Orthodox. | 139,845 | 172,271 | 239,766 | 1.3 |
| Jehovah's Witnesses | 7.007 | 34,596 | 68,018 | 0.4 |
| Jewish.. | 168,585 | 204.838 | 254,388 | 1.4 |
| Lutheran. | 401.836 | 444,923 | 662,744 | 3.6 |
| Mennonite ${ }^{\text {a }}$ | 111,554 | 125,938 | 152,452 | 0.8 |
| Mormon. | 25,328 | 32,888 | 50,016 | 0.3 |
| Penteoostal. | 57,742 | 95. 131 | 143,877 | 0.8 |
| Presbyterian. | $830+597$ | 781.747 | 818,558 | 4.5 |
| Roman Catholic | 4,806,431 | 6,099, 496 | 8,342,826 | 45.7 |
| Salvation Army .i. ${ }^{\text {a }}$. | 33,609 | 70, 275 | 92,054 | 0.5 |
| Ukrainian (Greet) Catholic ${ }^{2}$ | 185,948 | 191,051 | 189,653 | 1.0 |
| United Church of Canada. | 2,208,658 | 2,867.271 | 3,664,008 | 20.1 |
| Other. | 272,197 | 317,803 | 531,287 | 2.9 |
| Totals | 11,506,055 ${ }^{2}$ | 14,049,429 | 18,238,247 | 100.0 |

' Includes "Hutterites"
2 Includes "Other Greek Catholic"
${ }^{2}$ Exclusive of Newfourdland.

## Subsection 9.-Languages and Mother Tongues

The term "official language" used by the census refers only to the English and French languages.* "Mother tongue" is the language a person first learned in childhood and still understands. It should be noted that persons indicated as speaking "English only" or "French only" with respect to official language may also speak other languages and have a mother tongue other than English or French. The use of the English and French languages in Canada at the time of the 1961 Census is discussed in a special article appearing in the 1965 Year Book at pp. 180-184. Table 18 gives the numerical and percentage distribution of official language by province.
*The British North America Act, 1867 (Sect. 133) makes provibion for the use of the English and French languages as follows:-
"Either the English or the French Language may be used by any Person in the Debates of the Fouges of the Parliament of Canada and of the Houses of the Legislature of Quebec; and both those Languages shall be ueed in the reapective Records and Journals of those Houses; and either of those Languages may be used by any Person or in any Pleading or Process in or issuing from any Court of Canads established under this Act, and in or from all or any of the Courts of Quebec.

The Aets of the Parliament of Canada and of the Legislature of Quebec shall be printed and published in both those Languaces.'
18.-Numerical and Percentage Distribution of the Population Speaking One, Both or Neither of the "Official" Languages, by Province, Census 1561

Nort.-See text and footnote above re the term "official language".

| Province or Territory | English Only |  | French Only |  | English and French |  | Neither Einglish nor French |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | p.c. | No. | p.c. | No. | p.c. | No. | p.c. |
| Newfoundland. | 450,945 | 98.5 | 522 | 0.1 | 5,299 | 1.2 | 1.087 | 0.2 |
| Prince Edward Istand. | 95. 296 | 91.1 | 1.219 | 1.2 | 7,938 | 7.6 | 176 | 0.2 |
| Nova Scotia. | 684,805 | 92.9 | 5.938 | 0.8 | 44, 987 | 6.1 | 1,277 | 0.2 |
| New Brungwi | 370,922 | 62.0 | 112.054 | 18.7 | 113,495 | 19.0 | 1.465 | 0.2 |
| Ontario |  | 11.6 89.0 | $\begin{array}{r}\text { 3.254,850 } \\ 95 \\ \hline 1.236\end{array}$ | ${ }^{61.9} \mathbf{1 . 9}$ | $\begin{array}{r}1.338,878 \\ 493,270 \\ \hline\end{array}$ | 25.5 79 | 36.848 98.820 | 1.1 |
| Manitoba | 825,955 | 89.6 | 7,954 | 0.9 | 68,368 | 7.4 | 19.409 | 2.1 |
| Sagkatchewan | 865, 821 | 93.6 | 3,853 | 0.4 | 42,074 | 4.5 | 13,433 | 1.5 |
| Alberta | 1,253,824 | 94. 1 | 5.534 | 0.4 | 56.920 | 4.3 | 15,866 | 1.2 |
| British Columbia. | 1,552,560 | 95.3 | 2+559 | 0.2 | 57,504 | 3.5 | 16,459 | 1.0 |
| Yukon Territory | 13,679 | 93.5 | 38 | 0.3 | 825 | 5.6 | 86 | 0.6 |
| Northwest Territories. | 13,554 | 58.9 | 109 | 0.5 | 1,614 | 7.0 | 7,721 | 33.6 |
| Canade. | 12,284,76\% | 07.1 | 3,489,864 | 18.1 | 2,231,172 | 13.2 | 282,447 | 1.8 |

Mother tongues of the population are shown in Table 19. The proportion reporting English as their mother tongue in 1961 was 58.5 p.c. (compared with 59.1 p.c. in 1951), French 28.1 p.c. ( 29.0 p.c. in 1951) and all other mother tongues 13.5 p.c. (11.8 p.c. in 1951).

## 19.-Mother Tongues of the Population, Census 1961

| Mother Tongue | Number | Percentage of Total | Mother Tongae | Number | Percentage of Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
| English. | 10,660, 534 | 58.45 | Danish. | 35,035 | 0.19 |
| French. | 5,123,151 | 28.09 | Swedish | 32,632 | 0.18 |
| German. | 563,713 | 3.09 | Serbo-Croatiad | 28, 866 | 0.16 |
| Italiam... | 361,496 339,626 | 1.98 1.86 | Jipanese. | 17,856 14,997 | 0.10 0.08 |
| Netherlands. | 170, 177 | 0.93 | Flemish.. | 14,304 | 0.08 |
| Indian and Eskim | 166,531 | 0.91 | Lettish. | 14,062 | 0.08 |
| Polist. | 161,720 | 0.89 | Estonian | 13,830 | 0.08 |
| Magyar | 85,939 | 0.47 | Syrian and Arabic | 12,999 | 0.07 |
| Yiddish | 82,448 | 0.45 | Romanian | 10,165 | 0.06 |
| Finnish. | 49,099 <br> 44 | 0.27 0.25 | 1celandic Gzelic. | 8,993 | 0.05 0.04 |
| Russian. | 42.903 | 0.24 | Welsh. | 3,040 | 0.02 |
| Slovak | 42,546 | 0.23 | Other | 48,758 | 0.27 |
|  | 40,455 40,054 | 0.22 | Cana | 18,238,247 | 100.04 |

## Subsection 10.-Households and Families

This Subsection contains limited statistics on households and families recorded at the 1961 Census; more detailed information may be found in 1961 Census reports relating to households and families (see also p. 182).

A household, as defined in the census, consists of a person or a group of persons occupying one dwelling.* It usually consists of a family with or without lodgers, employees, etc. However, it may consist of a group of unrelated persons, of two or more families sharing a dwelling, or of one person living alone. Every person is a member of some household and the number of households equals the number of occupied dwellings.

The total number and the average size of households are given by province for the census years 1951, 1956 and 1961 in Table 20. The relatively stable average of persons per household indicates an almost equal rate of increase for the dwelling stock as for the population.

[^63]25.-Households and Persons per Household, by Province, Census Years 1851, 1956 and 1881

| Province or Territory | Households |  |  | Average Persons per Household |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1951 | 1956 | 1961 | 1951 | 1956 | 1961 |
|  | No, | No. | No. | No. | No. | No. |
| Newtoundland. | 70,980 | 78.808 | 87,940 | 5.0 | 5.1 | 5.0 |
| Prince Edward Island | 22,454 | 22,882 | 23,942 | 4.3 | 4.2 | 4.2 |
| Nova Scotia........ | 148,555 | 162,854 | 175,341 | 4.2 | 4.1 | 4.0 |
| New Brunswick | 114,007 | 120.475 | 132.745 | 4.4 | 4.5 | 4.4 |
| Quebec. . | 858,784 | 1,001,264 | 1,191,469 | 4.6 | 4.4 | 4.2 |
| Ontario.. | 1,181.128 | 1,392,491 | 1,640,881 | 3.8 3.7 | 3.8 | 3.7 |
| Manitobs. | 202,398 | 217.964 | 245, ${ }^{2394}$ | 3.7 3.7 | 3.7 | 3.7 3.6 |
| Saskatchewan | 2250,747 | 294,047 | 349,816 | 3.6 | 3.7 | 3.7 |
| British Columbia | 337,777 | 392,403 | 459,534 | 3.3 | 3.4 | 3.4 |
| Yukon and Northwest Territorie |  | 8,904 | 7,920 |  | 3.8 | 4.2 |
| Canada. | 3,408,2841 | 3,823,645 | 4,554,736 | 4.01 | 3.9 | 2.9 |

[^64]The average size of the Canadian family* made a further gain between 1956 and 1961, continuing the trend of the 1951-56 period. Every province except Quebec and Saskatchewan participated in this increase, as shown in Table 21.
71.-Families and Persons per Family, by Province, Census Years 1951, 1956 and 1861

| Provitce or Territory | Families |  |  | Average Persons per Family |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1951 | 1956 | 1961 | 1951 | 1956 | 1961 |
|  | No. | No. | No. | No. | No. | No. |
| Newfourdland. | 74,858 | 82,128 | 89.267 | 4.4 | 4.6 | 4.7 |
| Prince Edward Island. | 21,381 | 21,153 | 21,969 | 4.0 | 4.1 | 4.2 |
| Nova Scotia..... | 145,127 | 154. 243 | 161,894 | 3.9 | 3.9 | 4.0 |
| New Brunswick | 111,639 | 116,623 | 124,653 | 4.1 | 4.2 | 4.3 |
| Quebec.. | 856,041 | 970,414 | 1,103,822 | 4.2 | 4.2 | 4.2 |
| Ontario. | 1,162,772 | 1,342,572 | 1,511,478 | 3.4 | 3.5 | 3.6 |
| Manitobs. | 191,268 | 204, 414 | 215, 831 | 3.6 | 3.6 | 3.7 |
| Saskatchewav. | 198,188 | 205, 135 | 211,776 | 3.7 | 3.8 | 3.8 |
| Alberta. | 223,326 | 262,922 | 305,671 | 3.7 | 3.7 | 3.8 |
| British Columbia. | 299,845 | 346,003 | 394,023 | 3.3 | 3.4 | 3.6 |
| Yukor and Northwest Territorie | 4,939 | \$.893 | 7,060 | 3.9 | 4.1 | 4.3 |
| Canada | 3,287,384 | 3,711,500 | 4,147,414 | 3.7 | 3.8 | 3.9 |

Closely related to the number of families per household, and also an indicator of living conditions, is the type of family. In 1961, 94.3 out of every 100 families in Canada were maintaining their own households as compared with 92.3 in 1956 and 90.2 in 1951, an apparent steady improvement in living conditions. The families not maintaining their own households fell into two main sub-categories-families related to the head of the household and non-related lodging families. The few who did not fit either of these sub-categories were mostly families of employees living in their employer's household.

There were $7,777,137$ children in families in 1961. These are limited by definition to children never married and under 25 years of age who were living with their parents or guardians at the time of the census. In Table 22, the number of children is classified to show the number in each of four separate age groups corresponding roughly to pre-schoolage children, those of elementary school age, those at the secondary school level, and those of college or working age.

[^65]22.-Children Living at Home classified by Age Group and by Province, Census 1961

| Province or Territory | Under <br> 6 Yeara | $\begin{aligned} & \text { B-14 } \\ & \text { Years } \end{aligned}$ | 15-18 Years |  | 19-24 Years |  | Total Children Living at Home |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Total | At School | Total | At School |  |
|  | No. | No. | No. | No. | No. | No. | No. |
| Newfoundland. | 80.245 | 109,020 | 32.582 | 21,004 | 16,827 | 1,522 | 238.674 |
| Prince Edward Ioland. | 15,550 | 21, 563 | 6.626 | 4,465 | 3,606 | 600 | 47.345 |
| Nova Scotia. ${ }^{\text {New }}$ Brunswi. . | 107.627 | 144,950 | 45.611 | 32.907 | 23, 000 | 4,036 | 321. 188 |
| Nowf Brunswick | 93.231 | 131,102 | 39.668 | 27.329 | 19,746 | 3,660 | 283,747 |
| Ouebec. | 789, 382 | 1,042,937 | 353,764 | 209.975 | 240,275 | 34,464 | 2.426.358 |
| Manitobs | -127, 250 | $1,111.981$ | 321.482 | 245,421 | 179,622 | 45,625 | 2,487,403 |
| Saskatchewan | 134,502 | 176.645 | 53,033 | 39,158 41,997 | 26, 2396 | 5,883 5,738 | 374,571 387,576 |
| Alberta. | 212,114 | 250,672 | 70,886 | 57,259 | 32,882 | 8,351 | 56\%,354 |
| British Columbia | 220.347 | 281,698 | 83,272 | 68,346 | 42,081 | 11,714 | 627.398 |
| Territories....... | 7,158 | 6.985 | 1,554 | 861 | 826 | 81 | 16,523 |
| Canada | 2,651,724 | 3,446,569 | 1,053,808 | 748,7k4 | 609,036 | 121,082 | 7,777,187 |

Additional household and family classifications are given in the 1963-64 Year Book at pp. 180-181-families classified by age of head, and families classified by marital status and sex of family head; and in the 1965 Year Book at pp. 185-186-households classified by number of persons, households classified by number of families and by number of lodgers, and families classified by type and by province.

## Section 2.-Intercensal Surveys

Intercensal estimates of the population of Canada, of the provinces classified by sex and by age group, and of the major cities and metropolitan areas are constructed as of June 1 each year. These estimates are calculated using the preceding census counts, the annual birth, death and immigration records and other pertinent data on emigration and interprovincial shifts. Following each census, the previous post-censal estimates are adjusted to the newly recorded population figures.

Because of the impending availability of the 1966 Census figures and therefore the early adjustment of the 1962-65 population estimates, intercensal data are not included in this edition of the Year Book. The 1966 population figures obtainable at the time of going to press will be included in Appendix II.

## Section 3.-The Native Peoples of Canada

## The Indians*

More than 217,000 Canadians are registered as Indians by the Indian Affairs Branch of the Department of Indian Affairs and Northern Development. Registered Indians include all persons descended in the male line from a paternal ancestor of Indian identity, who have chosen to remain under Indian legislation. They are grouped, for the most part, into 551 bands and occupy or have access to 2,269 reserves or settlements having a total area of $5,976,317$ acres.

## 23.-Indian Land in Reserves and Settlements and Number of Bands, by Province, as at Mar. 31, 1966

| Province or Territory | Bande | Settlements |  | Reserve8 |  | Total Area |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | acres | No. | acres | acres |
| Prince Edward Lsland. | 1 | - | - | 4 | 2,741 | 2,741 |
| Nova Scotia.......... | 11 | - | - | 38 | 25.571 | 25,571 |
| New Brunswick | 15 | 13 | 72.4 | 23 | -37,655 | 37.655 188.178 |
| Quebec. | 15 112 | 13 4 | 7,241 | 26 166 | 1,539,473 | 1,589,851 |
| Manitoba | 51 | 4 | 318 | 101 | 1,522,199 | 1.522 .199 |
| Saskatchewsn. | 67 | - | - | 123 | 1,225,090 | 1,225,090 |
| Alberta. | 41 | 4 | 217 | 92 | 1,607,480 | 1,607,697 |
| British Columbia | 188 | 25 | 1844 | 1,620 | 820, 348 | 820,348 |
| Yuk on Territory...... | 15 15 | ${ }_{29}^{26}$ | 1,844 2,143 | - | - | 4,844 2,143 |
| Totals | 551 | 76 | 14,823 | 2,183 | 5,361,494 | 5,976,317 |

A Departmental census of Indian population is taken every five years and the numbers recorded at the three latest censuses-1949, 1954 and 1959-are given in Table 24; the figures for 1961, 1963 and 1965 are taken from data kept for administrative purposes by the Indian Affairs Branch.
*Revised in the Indian Affairs Branch, Department of Indian Affairs and Northern Development, Ottawa.

## 24.-Indian Population, by Province, Departmental Censuses 1949, 1954 and 1959

 and Estimates 1961, 1963 and 1965| Province or Territory | 1949 | 1954 | 19591 | $1961{ }^{1}$ | $1963{ }^{1}$ | $1965{ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. |
| Prince Edward Island. | 273 | 272 | 341 | 348 | 374 | 394 |
| Nova Scotia. | 2,641 | 3,002 | 3,561 | 3,746 | 3,935 | 4,102 |
| New Brunswick | 2,139 | 2,629 | 3,183 | 3,397 | 3,629 | 3,808 |
| Quebec. | 15,970 | 17,574 | 20,453 | 21,793 | 23,043 | 24,448 |
| Ontario. | 34,571 | 37,255 | 42,668 | 44,942 | 47,260 | 49,458 |
| Manitoba. | 17,549 | 19,684 | 23,658 | 25,681 | 27,778 | 29,957 |
| Saskatchewan | 16,208 | 18,750 | 23,280 | 25,334 | 27,672 | 29,996 |
| Alberta. | 13,805 | 15,715 | 19,287 | 20,931 | 22,738 | 24,596 |
| British Columbia | 27,936 | 31,086 | 36,229 | 38,616 | 40,990 | 43,250 |
| Yukon Territory | 1,443 | 1,568 | 1,868 | 2,006 | 2,142 | 2,352 |
| Northwest Territories | 3,772 | 4,023 | 4,598 | 4,915 | 5,235 | 5,503 |
| Totals | 136,407 | 151,558 | 179,126 | 191,709 | 204,796 | 217,864 |

${ }^{1}$ As at Dee. 31 .
Administration.-Pursuant to the British North America Act, the administration of Indian affairs, which had been under the management of several provinces, came under the jurisdiction of the Government of Canada in 1867. From January 1950 to December 1965, Indian affairs were the responsibility of a Branch of the Department of Citizenship and Immigration. In June 1966 (SC 1966, c. 25) a new department was formed whereby the Indian Affairs Branch joined with part of the Department of Northern Affairs and National Resources to become the Department of Indian Affairs and Northern Development.

The Indian Affairs Branch is composed of a headquarters staff at Ottawa, eight regional offices and 84 field agencies. Attached to the headquarters and regional offices are specialists in such matters as education, economic development, community development, resource management, social welfare, and engineering and construction. Liaison is maintained with the Medical Services Directorate of the Department of National Health and Welfare, the federal agency concerned with the medical care of Indians.

It is the primary function of the Indian Affairs Branch to administer the affairs of Indians in a manner that will enable them to participate fully in the social and economic life of the country. Underlying administrative duties of the Branch include the management of Indian reserves and surrendered lands, the administration of band funds, estates management, enfranchisement of Indians and the administration of treaty obligations.

Five main objectives are being pursued vigorously in an attempt to assist the Indians in adjusting to the pace of social and economic growth. (1) An accelerated program in education places more emphasis on vocational training, retraining for employment, assistance in placement, adult education, kindergartens and a greater use of provincial schools. (2) The program of industrial and resource development has been expanded; in the past the program was mainly dependent on the traditional resources of fur, fish, forestry and farming but opportunities are now being extended to new areas by loans and other incentives to foster industrial development on the reserves and to facilitate the relocation of families to places where full-time employment is available. (3) A five-year program of reserve improvement has been instituted for which $\$ 112,000,000$ has been allotted to provide better housing, water and sewerage systems, electrification and roads. (4) To develop local self-government, Indian bands, where possible, are encouraged to operate on the same basis as local municipalities and grants are given where they are required to meet some of the financial needs of the Indian community. (5) Provincial services to Indians are being extended; some provincial services are now provided and, where bands so desire, arrangements can be made with a province to make additional services available.

Eight Regional Indian Advisory Councils have been established by the Department to provide machinery for effective consultation with representatives of the Indian people. Each Council is composed of eight to 12 Indians elected by the bands in the region, as well as representatives of Indian organizations. The consultation procedure is used to interpret
federal policies and to obtain Indian views on matters of policy, proposed fegislation, federal-provincial agreements, new programs and proposals to change existing programs. A National Indian Advisory Board has also been formed as a means of bringing together Indians representing all regions. It is made up of 18 representatives who are named by the Regional Councils on a population basis. The function of the Board is to advise the Department on matters of national importance to the Indian people as distinct from matters of regional interest. In addition, Federal-Provincial Co-ordinating Committees have been established and are in operation in most provinces. They meet fairly regularly, some as often as once a month, and perform an important function in guiding the plans and programs of the federal and provincial governments in relation to Indians, and in establishing effective liaison between the governments and a better understanding of their respective objectives, policies and programs.

Education.-This major key to continued Indian progress receives ever-increasing support from Indiau parents, from their school committees, from non-federal governments and from professional groups specifically concerned with classroom instruction of Indian pupils. The Indian Affairs Branch maintains and operates a number of schools for Indians, but 29,355 of the 61,395 Indian elementary and secondary school population attend non-federal schools. Attendance of Indians at non-federal schools has been arranged, for the most part, through agreements between the Branch and individual school boards. In 1964, however, an agreement was concluded with the Province of Manitoba to provide for a uniform tuition fee to be paid by the Branch for Indian pupils attending schools under the jurisdiction of that province. Manitoba also passed legislation to give Indian children the right to attend any non-federal school.

There are three types of federal schools, all operated at the expense of the Federal Government. On many reserves, day schools provide education for children who live at home. Residential schools care for orphaned children, children from broken homes and for those who, because of isolation or for other reasons, are unable to attend day schools. The third type of school gives instruction to children confined to hospital. All standard classroom supplies and authorized textbooks are used in federal schools, which follow generally the curriculum of the province in which they are located. Financial assistance for pupils attending non-federal schools varies from payment of tuition fees to full maintenance. Promising senior students are awarded scholarships to attend university or vocational school and scholarships are given to those who show promise in the arts.
25.-Enrolment of Indian Pupils in Elementary and Secondary Schools classified by Type of School and by Grade, Schoot Years Ended 196?-66

| Year and Type of School | Grade |  |  |  | Special | Absent from Reserve ${ }^{1}$ | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Pre-1 | 1-6 | 7.8 | 9-13 |  |  |  |
|  | No. | No. | No. | No. | No. | No. | No. |
| 1961-62, | 3,560 | 32.746 | 5,698 | 3,381 | 739 | 1.618 | 47.740 |
| Federal... | 3,403 | 24.856 8,490 | S, 2681 $\mathbf{2 , 3 6 7}$ | 2.785 298 | 759 | 1, 616 | 92,935 15,586 |
| Non-federa | $15 \%$ | 8,490 | 2,387 | 2.785 | - | 1,616 |  |
| 1962-03.... | 3,759 | 34,035 | 5,772 | 3, ${ }_{797}$ | 590 690 | 1,924 | 49.910 82,000 |
| Federal... | 3,407 | 24,268 8,778 | S,004 $\mathbf{2}, 768$ | 787 s,098 | 690 | 1,904 | $\mathbf{8 2 , 0 0 0}$ 17.90 |
| 1963-64. | 3,897 | 35,453 | 6,161 | 4,085 | 770 | 4,575 | 54,921 |
| Federal. | $\boldsymbol{s , 6 7 5}$ | 24,791 | \$,089 | 760 | 506 | - 7 | \$2,711 |
| Non-federal. | S82 | 10,668 | S.072 | \$,315 | \$64 | 4,575 | 22,810 |
| 1964-65. |  | 36,229 |  |  |  | 4,686 | 57, 265 |
| Federal.... | 3,42\% | 24,067 | \$,298 | \% 768 | 509 | -888 | \$8, 0508 |
| Non-federal | 605 | 5\%, 688 | 3,466 | 8,993 | 285 | 4,686 | 85,207 |
| 1965-66. | 3,660 | 38,929 | 7,107 | 5,220 | 1,013 | 5.466 | 61,395 |
| Federal | 3,093 | 24,666 | 3,209 | ${ }^{716}$ | ${ }_{6}^{681}$ | $\checkmark$ | 38,040 |
| Non-federal. | 567 | 14.363 | 3,904 | 4.504 | 651 | 6,466 | 29,885 |

${ }^{1}$ Pupila (and parents) Living off the reserves in communities with educational facilities umually attend nonfederal schools but school records are not maintained by the Indian Affairs Branch.

## 26.-Enrolment of Elementary and Secondary Indian Pupils in Non-federal ${ }^{1}$ Schools classified by Grade and by Province, School Year 1965-66

| Grade | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| Pre-grade 1..... | - | 28 | - | 73 | 128 | 17 | 26 | 40 | 133 | - | 122 | 567 |
| Grade- | - | 38 | 19 | 182 | 442 | 359 | 561 | 507 | 593 | 118 | 203 | 3,022 |
|  | - | 30 | 14 | 177 | 457 | 265 | 414 | 397 | 493 | 59 | 178 | 2,484 |
| 3. | - | 30 | 22 | 157 | 453 | 311 | 352 | 357 | 445 | 62 | 123 | 2,312 |
| 4........... | 1 | 35 | 41 | 144 | 445 | 268 | 292 | 297 | 451 | 46 | 154 | 2,174 |
|  | - | 25 | 48 | 180 | 454 | 276 | 267 | 308 | 483 | 77 | 120 | 2,238 |
|  | 1 | 26 | 37 | 261 | 434 | 208 | 274 | 289 | 451 | 59 | 93 | 2,133 |
|  | - | 26 | 45 | 197 | 453 | 198 | 258 | 324 | 427 | 50 | 75 | 2,053 |
| 8.......... | - | 41 | 31 | 276 | 398 | 112 | 157 | 260 | 488 | 43 | 45 | 1,851 |
|  | 4 | 54 | 44 | 176 | 637 | 163 | 216 | 331 | 402 | 26 | 38 | 2,091 |
| 10........... | 1 | 21 | 18 | 105 | 392 | 96 | 111 | 132 | 295 | 18 | 31 | 1,220 |
| 11........... | - | 13 | 12 | 69 | 208 | 61 | 61 | 84 | 158 | 6 | 13 | 685 |
| $12 \ldots \ldots \ldots$. | - | 1 | 7 | 8 | 137 | 32 | 66 | 83 | 114 | 2 | 11 | 461 |
| 13.......... | - | - | - | - | 31 | - | - | - | 16 | - | - | 47 |
| Special.......... | - | 1 | - | 5 | 64 | 15 | 59 | 37 | 290 | 27 | 53 | 551 |
| Absent from reserve. $\qquad$ | 30 | 50 | 102 | 485 | 2,000 | 449 | 737 | 300 | 1,300 | 13 | - | 5,466 |
| Totals...... | 37 | 419 | 440 | 2,495 | 7,133 | 2,830 | 3,851 | 3,746 | 6,539 | 606 | 1,259 | 29,355 |

${ }^{1}$ Provincial, private and territorial schools.
27.-Indian Students in Post-Secondary and Vocational Training, School Year 1965-66

| Course of Study | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| University ...... | - | 14 | 3 | 39 | 18 | 4 | 9 | 11 | 32 | 1 | - | 131 |
| Teacher training colleges. | - | - | 1 | 10 | 7 | - | - | - | - | - | - | 18 |
| Nurse's training | - | 1 | 1 | 3 | 10 | $\bar{\square}$ | 3 | 2 | 4 | - | - | 24 |
| Vocational...... | 1 | 25 | 15 | 181 | 389 | 135 | 114 | 49 | 294 | 40 | 1 | 1,244 |
| Upgrading...... | 2 | - | 12 | 2 | 352 | 144 | 52 | 10 | 135 | 17 | - | 726 |
| Totals...... | 3 | 40 | 32 | 235 | 776 | 283 | 178 | 72 | 465 | 58 | 1 | 2,143 |

Resources and Industrial Development.-In the field of renewable resource development programs for Indians, co-operation between the provinces and the Indian Affairs Branch, both formal and informal, continued during 1965-66. A greater demand for Canadian wild fur, mainly by European interests, together with a particular interest in long-hair species such as fox and lynx, resulted in substantially higher prices and therefore more revenue to the Indian trappers, giving them an incentive to increase their catch. Commercial fishing operations by Indians continued to yield about $2,000,000 \mathrm{lb}$. and higher prices were received for certain species, notably yellow pickerel. Products from the forests of the reserves included about $90,000,000 \mathrm{ft}$. b.m. of lumber, 65,000 cords of pulpwood, $1,000,000$ fence posts and 900,000 Christmas trees. During the year, agreements were arranged with the provinces to give better fire protection to these valuable forest resources. It should be noted here that assistance is given to Indian forest workers for training purposes so that they may participate to a greater extent in mechanized forest operations off the reserves. Oil and gas produced from Indian reserves during 1965-66 had an estimated value of $\$ 10,500,000$ and revenues to Indian bands from royalties, bonuses and rentals for petroleum leases amounted to $\$ 4,567,000$. It is known that many Indian reserves have considerable mining potential which is now beginning to be exploited.

With the consent and participation of the bands concerned, surveys are being undertaken to establish present and potential use of reserve lands. Where required, Indians are being trained to exploit and manage their own lands and are assisted in acquiring the equipment necessary for such development. Greater interest is being shown by many bands in utilizing their reserve lands for industrial and commercial purposes and the development of resources on or near reserves is leading to the formation of co-operatives and other processing facilities at more remote reserves. The adaptation of Indian people to Canadian industrial and business life is encouraged, in their reserve communities, by financial and professional help in operating small businesses.

Tnder a community employment program, opportunities are provided for the Indian people to acquire knowledge and experience in the duties and responsibilities of selfgovernment, to acquire the ability to develop the resources and improve the public areas on their reserves and to become oriented to wage employment. During 1965-66, 491 projects costing $\$ 1,2 \pi \overline{7}, 010$ were financed under this program.

Employment assistance officers promote Indian employment and vocational training measures in a wide range of occupations. The program includes on-the-job and in-service training to equip Indians for employment in skilled, semi-skilled, clerical and administrative classifications, as well as financial assistance to help defray the expenses they encounter as they enter full-time employment, for such items as tools, clothing, room and board, etc.

In 1965-66, Indian people produced about $\$ 1,200,000$ worth of handicraft items for sale and for their own use. Interest in their traditional crafts and expanding markets is bringing about a steady growth in this important industry and to encourage this source of revenue the Indian Affairs Branch maintains a marketing and advisory service, conducts national promotional programs and gives technical and financial assistance. Many Indian people have established successful enterprises based on the production and sale of arts and crafts.

Community Development.-During 1965-66, under the community development program of the Indian Affairs Branch, efforts of the Indian communities were mobilized with those of the government for the benefit of the Indian people. During the year, Branch officers were trained in community development techniques and practices; the number on strength at Mar. 31, 1966 was 57. Several provinces participated in community development on a project basis, with the Federal Government sharing the costs to the extent of $\$ 226,634$. Grants were made available to Indian bands lacking funds, in order that they might, on their own initiative, plan projects, manage the finances required and effect social, economic and physical improvement on their reserves. A major use of the grants will be to hire, train and employ band civil servants; 19 were hired during 1965-66, including managers, secretaries, road foremen, special constables and welfare administrators.

A program was started in 1965 to develop and perpetuate Indian culture through encouraging Indian arts and fine crafts, literature, dancing, folk songs and related activities. Incentives include grants, subsidies and scholarships to individuals, groups and organizations for the development of their creative and performing talents.

Physical Devetopment of Reserves.-Early in 1966 a plan was announced by the Federal Government for the expenditure of $\$ 112,000,000$, over a five-year period, for the physical improvement of Indian reserves. The program provides for assistance for housing, safe water supply. sanitation facilities, electrification of homes and improved roads in Indian communities. Following a study of housing conditions on reserves, completed in February 1965, it was indicated that there was a need for 12,000 new homes. The objective of the program is to build these homes with about $\$ 75,000,000$ in public funds joined with
band funds and personal contributions; 1,500 will be constructed in 1966-67. Some $\$ 10,000,000$ will be spent to supply safe drinking water and proper sewage disposal and a rural electrification program is being undertaken, using public utilities wherever possible, at a cost of about $\$ 7,000,000$. The remainder will go toward providing better roads. Expenditures on these projects during $1966-67$ will amount to $\$ 13,276,545$.

Welfare.-The provision of general welfare assistance and services to indigent Indians is an essential factor in assisting them to raise their social and economic status. The welfare program administered by the Indian Affairs Branch includea public assistance (food, clothing and shelter) to dependent Indians and certain categories of non-Indians living on reserves, care and maintenance of children and adults, and rehabilitation services for physically and/or socially handicapped Indians. Since January 1965 the Branch has adopted the same rates of assistance and the same eligibility conditions as apply to other recipients of public assistance in the Northwest Territories, British Columbia, Alberta, Saskatchewan, Manitoba and Ontario. The scale of food assistance establisbed by the Branch continues in Quebec and the Maritime Provinces.

As there is no specific federal welfare legislation in respect to Indians, the Indian Affairs Branch relies on provincial welfare legislation and provincially accredited welfare agencies for the enforcement of such legislation. In the field of child welfare, the Federal Govermment has entered into agreement with 25 children's aid societies in Ontario whereby Indian children may receive the same services as non-Indians in accordance with provincial child welfare legislation. There are similar agreements with the Governments of Manitoba and Nova Scotia. The Indian Affairs Branch assumes financial responsibility for both the administrative and maintenance costs of Indian children who are placed in the care of such agencies. Some provinces provide services on a voluntary basis and, by informal arrangements, the Federal Government pays the cost of maintenance of children placed in foster homes or institutions. Where such services are not available, Indian Affairs Branch staff, with the consent of parents or guardians, arrange for care of neglected children in foster homes or institutions. The Branch provides maintenance and care in homes for the aged and other institutions for physically and socially handicapped adults who do not require active medical treatment.

In general, provincial rehabilitation programs are extended to handicapped Indians on the same basis as to non-Indians. Under separate agreements with the Alberta Tuberculosis Association, the Saskatchewan Society of Crippled Children and Adults and the Manitoba Sanatorium Board, the Federal Government assumes financial responsibility for full maintenance and tuition on behalf of Indian students participating in upgrading and social orientation programs in these provinces. The Federal Government is negotiating cost-sharing agreements with provinces to provide Indian residents the full range of welfare programs administered by provincial governments. A welfare agreement between the Government of Ontario and the Federal Government allows for the inclusion of Indians in the eatablished welfare program of that province.

In addition to the extensive welfare program for Indians financed and administered by the Indian Affairs Branch, welfare services and social benefits available to Indians in Canada include: (1) programs under which Indians are eligible for such categorical benefits as family allowances, youth allowances and old age security, administered by the Department of National Health and Welfare; (2) programs financed jointly by federal and provincial governments and administered by provincial governments, such as old age assistance and blind and disabled persons' allowances; and (3) specific programs established by provincial governments-in Ontario, Indian women may receive mothers' allowances and assistance to widows and unmarried women; indigent Indian mothers in Quebec are eligible for needy mothers' allowances; and, upon application, abandoned children and adult Indians in Nova Scotia receive certain benefits in accordance with the Nova Scotia. Social Assistance Act.

## The Eskimos*

There are altogether about 13,000 Eskimos in Canada, spread out over the Northwest Territories, Arctic Quebec and Labrador. Although many of them still depend to a great extent on game and fish for subsistence, they have enjoyed marked improvement in their circumstances in the past ten years. Their traditional nomadic way of life is giving way to that of a more settled wage-earner and they are becoming established in permanent communities where opportunities are greater for education, health services and employment. In addition to those self-employed in such activities as fishing, hunting and trapping, many of whom are members of co-operatives, Eskimos are working in a variety of fields-as civil servants, clergymen, aircraft pilots, miners, carpenters, mechanics, diesel and tractor operators and oil drillers. An Eskimo manages the CBC radio station at Inuvik and another produces Eskimo-language programs for the CBC Northern Service. Eskimo women work as interpreters, waitresses, nursing assistants, secretaries and clerks, in southern as well as northern communities. However, the number in actual wageearning employment is as yet relatively small and it is the Federal Government's role to prepare, through education, as many of them as wish to do so to enter wage-earning employment and, so that wage-earning opportunities will be available to them, to create a kind of economic climate in the North which will encourage private enterprise to invest in the development of the vast resources of that area. Various federal programs of highway, access road and air-strip construction, resources cataloguing, provision of bulk oil storage facilities and cheap power are under way to assist in this objective.

In satisfying the first primary need of the Eskimo-the safeguarding of his life-the Department of Indian Affairs and Northern Development is now in reasonably regular contact with most of the Eskimo people, even though a good portion of them still follow their nomadic habits. The full range of social services applicable to all Canadians is extended to the Eskimos. Medical care provided for them through the years has been such that the annual natural increase among them is now between 3 and 4 p.c., indicating that the Eskimo population will double in a period of about 20 years. The increasing size of families and the general movement toward living in settlements in many areas have created a need for permanent housing. Through a loans and grants program, initiated in 1959, Eskimos are encouraged to buy their own homes. A $\$ 1,000$ or $\$ 2,000$ subsidy, depending on the size of the house, covers part of the cost of construction and the owner may borrow the remainder from the Eskimo Loan Fund and repay it on terms adjusted to his income. A man's labour in building his home reduces the total cost. Through this program, basic housing has been provided for more than 1,000 Eskimo families but, because the need is still great and urgent, a new four-year rental housing program was started in late 1965 under which 1,600 houses will be built over a five-year period at a cost of $\$ 12,000,000$. The houses will include one, two and three bedroom designs and will be available at rentals that will cover basic furnishings, heat, electricity, water and sewage and garbage services. The rent to be paid will be determined by the family's ability to pay and the difference will be absorbed by the Government. The families in rented houses will be credited with the value of the householder's labour in the construction, maintenance and improvement of his house. In addition, to enable a family to acquire ownership of a rental house, one third of all rent paid can be applied toward its purchase when the family is ready to take this step.

The second need of the Eskimo is education and training-to give him a better chance in competing for employment, to give those with the interest and ability an opportunity to take their proper place as leaders in their home communities or elsewhere, or to give those who will follow the traditional way of life a more meaningful and satisfying existence. The number of schools in the North has grown from 11 in 1952 to 64 at the end of 1965 and a program for construction of school facilities-elementary, secondary, vocational and pre-school-is under way. By 1971, 132 new classrooms, 64 auxiliary rooms and 54 classroom replacements will have been built, as well as facilities to house 1,550 resident students

[^66]and about 200 school staff members. More than 3,000 young Eskimos attend the present 64 schools, which they share with all other children who live in the North; over 85 p.c. of the school-age population of the Northwest Territories is now in school. Provincial curricula are used but are adapted by committees of experienced northern teachers to relate more closely to those things that are meaningful to northern students. A large number of texts and course outlines have been tailored to the northern scene and a standard Roman orthography has been devised for the Eskimo language. There are Eskimo children in all the high school grades in the Mackenzie District and a few at the high school level in the Eastern Arctic. A program of grants and loans to finance university education for Eskimo, Indian and white children, approved by the Northwest Territories Council in 1963, assures higher education for those who qualify. Vocational education courses with full financial assistance are available at all levels both in the Territories and, by agreement, at various technical institutions in the provinces. At present there are about 400 Eskimos taking advantage of these programs. To provide more skilled workers and raise occupational standards in the North, an apprentice training program was begun in 1964; at present, almost 30 Eskimos are apprenticed in skilled trades. Selection and placement officers are located at the five largest centres in the North, working in close co-operation with the Canada Manpower Division of the Department of Manpower and Immigration. They select people for training to meet the specific requirements of employers, place people in employment and offer counselling service to new employees.

To aid the Eskimos who will continue to live off the land either by choice or by necessity, area economic surveys are conducted to determine what resources are exploitable locally, followed by development programs to take advantage of these resources. In this way, commercial fisheries, logging operations, fur garment manufacturing, specialty food processing and arts and crafts have been undertaken in a number of Eskimo communities.

Eskimo co-operatives have developed very rapidly; there are now 22 co-operatives engaged in commercial fishing, fine crafts, graphic art and sculpture, the operation of retail stores, logging and boat-building and, at Frobisher Bay and Inuvik, groups of Eskimo families have formed housing co-operatives. Products from the co-operatives are maintaining the Eskimos' reputation as skilled artists and craftsmen. The West Baffin Eskimo Co-operative, which produces graphic art, has established Cape Dorset as an art centre of distinction and interesting prints are also produced at Povungnituk, Holman Island and Baker Lake. Soapstone sculptures from Povungnituk, Grise Fiord and Igloolik are well known and Eskimo craftsmen living at Baker Lake, Rankin Inlet, Coppermine, Resolute and Great Whale River are producing a wide range of original and attractive articles. The fishery co-operatives at George River in the Northwest Territories have found ready and profitable markets for their catches of Arctic char. Ookpik, a shaggy little sealskin owl produced by Mrs. Jeannie Snowball of the Fort Chimo Cooperative in 1963 was chosen by the Department of Trade and Commerce as the symbol for Canada Week at the Philadelphia Trade Fair. He was a sensation and received much publicity. He was registered under the trade marks and patent laws to protect Mrs. Snowball and the co-operatives, and licensing agreements with manufacturing firms in Southern Canada have created a major source of revenue for this co-operative.

## Section 4.-Statistics of World Population

World population figures given in Table 28 are from the United Nations Population and Vital Statistics Report for January 1966 and, except as otherwise noted, are mid-year estimates for 1964. The area figures are from the United Nations Statistical Yearbook 1965.

Estimated Population of the World by Continents.-The following statement presents adjusted estimates of the 1964 mid-year population of the world by continental divisions. These aggregates do not coincide exactly with the sum of the figures for individual countries because they include, in addition, adjustments for over- and under-
enumeration, over-estimation, data for categories of population not regularly included in the official figures, and approximations for the countries that have not provided official 1964 data. The estimates are as follows:-

| Continertal Division | Population |
| :---: | :---: |
|  | '000 |
| Africs. | 304,000 |
| North America, | 286,000 |
| South America, | 162,000 |
| Asia. | 1,780,000 |
| Europe. | 448,400 |
| Oceania. | 17,000 |
| Union of Soviet Socialist Republice... | 228,000 |
| World Total. | 3,220,000 |
| Commonwealth countries (as at June 30, 1966), | 802,896 |

## 28.-Areas and Populations of the Countries or Areas of the World

Norc.-Status of independency or dependency is as at June 30, 1966. Members of the Commonwealth and countries for which the British or Commonwealth members are responsible (June 30, 1968) are indicated with an asteriak (*).

| Continent and Country | Area | Population |
| :---: | :---: | :---: |
|  | sq. miles | '000 |
| Arrica |  |  |
| Soveritan Countrirs |  |  |
| Algeria | 919.595 | 10.975 |
| Burundi. | 10.747 | 2.500 |
| Cameroon............. | 183,569 | 5.103 |
| Central African Republic. | 240.535 495.755 | 1.320 3.300 |
| Congo (Brazzaville) .... | 132.047 | ${ }_{15}^{825}$ |
| Conso, Democratic Republic of. | 805,588 | 15,300 |
| Dabomey. Ethiopis | 43,484 471,778 | 22,200 ${ }^{2}$ |
| Gabon.... | 103,347 | 459 |
| *Gambis............... | 4,364 | 324 |
| *Ghana. . ${ }^{\text {G }}$. . | 92, 100 | 7.537 |
| Guines......... | $\begin{array}{r}94,926 \\ \hline 124,504\end{array}$ | 3,429 |
| Ivory Coast... | 124,504 | 3.750 9.104 |
| *Kenya........ | 43,000 | 1,041 |
| Libya.. | 679,362 | 1.559 |
| Madagascar | 230,036 | 6,180 |
| *Malawi... | 463,959 | 4,485 |
| Mauritania. | 419,232 | 900\% |
| Morocco. . | 171.835 | 12,959 |
| Niger..... | 489, 191 356.869 | 3,260 56.400 |
| - Nigeria. ........ | a 10 10 | $3.018{ }^{2}$ |
| Rwanda <br> Senegal. | 75,750 | 3.400 |
| * Sienegal. | 27,699 | 2,200 |
| Somalia..... | 246,202 | 2,350 |
| South Africa, excl. Walvia Bay | 971,445 | 17,180 |
| Sudan.................... | 21,853 | 1,603 1,605 |
| Togo... | 63, 379 | 4. 5685 |
| *Uganda. | 91,134 | 7,367 28.900 |
| United Arab Republic...... | 380. 102 | 28.900 |
| - United Republic of TanzanisTanzanyika. | 361,800 | 9,990 |
| Tangabar................ | 1,020 | 335 4.750 |
| Upper Volta................ | 105,809 290,586 | 4.750 3.600 |

[^67]28.-Areas and Populations of the Countries or Areas of the Forld-continued

| Continent and Country | Area | Population |
| :---: | :---: | :---: |
|  | 8q. miles | '000 |
| Africa-concluded |  |  |
| Non-sovereien Countries |  |  |
| Angola (Port.) | 481,354 | 5.084 |
| *Basutoland (U.K.). | 11,716 | 733 |
| -Bechuansland (U.K.) | 219,916 | 543 |
| Cape Verde Islands (Port.) | 1,557 | 220 |
| Comoro Islands (Fr.)... | 838 | 210 |
| Equatorial Guinea (sp.) | 10,831 | 283 |
| Fernasdo P60.... | 785 | 70 |
| Rto Muni ..... | 10.045 | 108 |
| French Somaliland (Fr.) | 8,494 | 81 |
| French Sonthern sand Antarctic Territories (Fr.). | 2,918 | 1 |
| Ini (Sp.) .... | 579 | 52 |
| *Mauritius, incl, dependencies (U.K.) | ${ }_{309}^{809}$ | 742 |
| Mozambique (Port.) | 302,330 | 6,872 |
| Portuguese Guinea (Port.) | 13,948 | 525 |
| Retanion ( $\mathrm{Fr}_{\text {r }}$ ) | 969 | 388 |
| ${ }^{*}$ Rhodesia ( $\left.\mathbf{D} . \mathrm{K}.\right) . . . .$. | 150,333 | 4,140 |
| *St. Helens, excl. dependencies (U.K.) | 47 |  |
| Ascension. ${ }_{\text {Tremen }}$ | 34 |  |
| Sto Tome and Prineipe (Port.) | 40 |  |
| *Seychelles (U.K.).......... | 156 | 46 |
| South Weat Africs, incl. Walvis Bay (S.A.) | 318,261 | 584 |
| Spanisb North Airica (Sp.). | 12 | 157 |
| Spanish Sahara (Sp.). | 102,703 | 48 |
| *Swaziland........ | 6,704 | 285 |
| Anerica, North <br> Soviretign Countries |  |  |
|  |  |  |
| ${ }^{*}$ Canads | 3,851,809 | 19.271 |
| Costa Riga. | 19,575 | 1,387 |
| Cubs. | 44,218 | 7,434 |
| Dominiean Republic. | 18,816 | 3,452 |
| El Salvador. | 8.280 | 2,824 |
| Gustemala. | 42,042 | 4,305 |
| Hsiti. .... | 10,714 | 4,551 |
| Honduras. | 43,277 | 2,092 |
| -Jmaica. | 4,232 | 1,739 |
| Merico... | 761, 604 | 39,643 |
| Nicaragua............... | 53,938 | 1,597 |
| Pansmag exat. Canal Zone. Canal Zone........... | 29,209 | 1,210 |
| Canal Zone....... | 553 | 54 |
| ${ }^{\text {TTrinidad and Tolagago..... }}$ | 1,980 | 949 |
| United States of America. | 3,615,211 | 192,119 |
| Non-sovereign Countries |  |  |
| *Antigus (0.K.) | 171 | 60 |
| ${ }^{\text {Brahama Islanda (U.K.) }}$ | 4,403 | 134 |
| *Barbados (U.K.) | 166 | 242 |
| ${ }^{*}$ Bermada ( ${ }^{\text {P K K }}$ ) | 20 | 48 |
| ${ }^{*}$ British Honduras (U.K.) | 8,867 | 103 |
| *Cayman Islands (U.K.). | 100 | 9 |
| *Dominica (U.K.) . . . . | 290 | 64 |
| Greenland (Ded.) | 840,004 | 37 |
| *Grenada (U.K.) | 138 | 93 |
| Guadeloupe ( $\mathrm{Fr}_{\text {r }}$ ) | 687 | 306 |
| Martinique (Fr.). | 425 | 310 |
| *Montserrat (U.K.). | 38 | 13 |
| Netherlands Antilles (Neth,) | 371 | 205 |
| Puerto Rico (U.S.). | 3,435 | 2,584 |
| *St. Kitte-Nevis-Anguilia (U.K.) | 138 | 59 |
| *St. Lueis (U.K.) | 238 | 92 |
| St. Pierre and Miquelon (Fr.).. | 93 | 5 |

[^68]28.-Areas and Populations of the Countries or Areas of the World-continued

| Continent and Country | Area | Population |
| :---: | :---: | :---: |
|  | sq. miles | '000 |
| America, North-concluded |  |  |
| Non-sovereign Countries-concluded |  |  |
| *St. Vincent (U.K.) | 150 | 85 |
| *Turks and Caicos Islands (U.K.). | 166 | 6 |
| *Virgin Islands (U.K.). . | 59 |  |
| Virgin Islands (U.S.)... | 133 | 41 |
| America, South |  |  |
| Sovereign Countries |  |  |
| Argentina. | 1,072,073 | 22,022 |
| Bolivia. | 424,165 | 3,653 |
| Brazil. | 3,286,488 | 78,8094 |
| Chile. | 286, 398 | 8,492 |
| Colombia | 439,515 109,484 | 17,482 4,8815 |
| *Guyana (formerly British Guiana) | 83,000 | 629 |
| Paraguay. | 157, 048 | 1,968 |
| Peru... | 496,224 | 11,2984 |
| Uruguay... | 72,173 352,145 | -8,4274 |
| Non-sovereign Countries |  |  |
| *Falkland Islands, excl. dependencies (U.K.). | 4,618 |  |
| French Guiana (Fr.) <br> Surinam (Neth.) | 35,135 55,144 | ${ }^{36}{ }^{6}{ }^{6}$ |
| Asia |  |  |
| Sovereign Countries |  |  |
| Afghanistan. | 250,000 | 15,227 |
| Bahrain....... | ${ }^{231}$ | 175 |
| *Bhutan.... | 18,147 |  |
| Burma. | 261,790 69 | 24,229 6,200 |
| Cambodia. | -69, ${ }^{6189}$ | 10,965 |
| China (mainland) | 3,691,523 | 686,000 |
| China (Taiwan and Pescadores) | 13,885 | 12,070 |
| ${ }^{*}$ Cyprus......................... | 1,176,157 | 471,624 |
|  | 1,575,896 | 102,200 |
| West Irian | 159,376 | ${ }^{800}$ |
| Iran.... | 636,296 | 22,860 |
| Iraq.. | 173,260 | 7,004 |
| Japan.... | 142,727 | 96,906 |
| Jordan...... | 37,738 | 1,898 |
| Korea.. | 85,0328 | 11,800 |
| North Korea....... | 38,004 | 27,63s |
| Republic of Korea. | 6,178 | 426 |
| Laos.... | 91,429 | 2,250 |
| Lebanon.. | 4,015 | 2,250 |
| *Malaysia- | 50,700 | 7,810 |
| Sabah. | 29,388 | 507 |
| Sarawak. | 48,342 | 820 95 |
| Maldive Islands.. | 592,667 | 1,050 |
| Mongolia......... | 82,000 | 565 |
| Nepal... | 54,362 365,529 | 9,920 100,762 |
|  | 365,529 | 10,762 |

[^69]28.-Areas and Populations of the Countries or Areas of the World-continued

| Continent and Country | Area | Population |
| :---: | :---: | :---: |
|  | sq. miles | '000 |
| Asla-concluded |  |  |
| Sovereign Countries-concluded |  |  |
| Philippines. | 115,831 | 31,270 |
| Qatar. | 8,500 | 60 |
| Saudi Arabia. | 870,004 | 6,630 |
| *Sikkim....... | 2,744 | 173 |
| *Singapore..... | 2,24 71.498 | 1,820 5 |
| Syria.......... | 71,498 198,457 | 5,399 29,700 |
| Trucial Oman. | 32,278 | 111 |
| Turkey | 301,382 | 30,677 |
| In Asia. | 292,261 | 28,155 |
| In Europe. | 9,121 | 2,522 |
| Viet-Nam- |  |  |
| North Viet-Nam...... | 61,294 | 17,900 |
| Republic of Viet-Nam. | 65,949 | 15,715 |
| Yemen.. | 75,290 | 5,000 |
| Non-sovereign Countries |  |  |
| *Aden and the Protectorate of South Arabia (U.K.)- |  |  |
| Aden (U.K.).......... | 75 | 231 |
| Protectorate of South Arabia (U.K.) | 111,001 |  |
| Bonin Islands (U.S. military)............ | , 40 |  |
| ${ }^{*}$ Brunei (U.K.) | 2,226 | 97 |
| ${ }^{*}$ Hong Kong (U.K.). | 398 | 3,692 |
| Macau (Port.). | 6 | 174 |
| Palestine (former mandated territory U.K.) | 10,460 | 1,912 ${ }^{9}$ |
| Gaza Strip... | 78 | 410 |
| Portuguese Timor (Port.) | 5,763 | 543 |
| Ryukyu Islands (U.S. military) | 848 | 927 |
| Europe |  |  |
| Sovereign Countries |  |  |
| Albania.. | 11,100 | 1,814 |
| Andorra. | 175 | 11 |
| Austria.. | 32,374 | 7,215 |
| Belgium.. | 11,781 | 9,378 |
| Czechoslovakia.... | 42,730 49 | 8,144 14,058 |
| Denmark. | 16,619 | 4,720 |
| Finland. | 130,120 | 4,580 |
| France (Metropolitan). | 211, 208 | 48,417 |
| Germany - |  |  |
| Eastern Germany. | 41,659 | 16,000 |
| Federal Republic of Germany | 95,743 | 56,097 |
| East Berlin... | 156 | 1,068 |
| West Berlin. | 186 | 2,193 |
| Greece.. | 50,944 | 8,510 |
| Hungary............ |  | 10,120 |
| Iceland... | 39,769 | ${ }^{189}$ |
| Ireland. | 27,135 | 2,849 |
| Italy.......... | 116,304 | 51,090 |
| Liechtenstein...... | 61 | 18 |
| - Luxembourg... | 998 | 328 |
| Monaco. | ${ }_{10} 122$ | 324 |
| Netherlands. | 12,978 | 12,127 |
| Norway. | 125,182 | 3,694 |
| Poland. | 120,665 | 31,161 |
| Portugal, incl. the Azores and Madeira Islands | 35,510 | 9,106 |
| San Marino. | 91,699 | 18,927 |
| Spain, incl. the Balearic and Canary Islands | 194,884 | 31,339 |

[^70]28.-Areas and Popalations of the Countries or Areas of the Forld-concluded

| Continent and Country | Area | Population |
| :---: | :---: | :---: |
|  | 8q. miles | '000 |
| Eurepe-concluded <br> Sovrraion Countrirs-concluded |  |  |
|  |  |  |
| Sweden. | 173,668 | 7,661 |
| Switzerland. | 15,941 | 8,874 |
| * United Kingdom of Great Britain and Northern Ireland. | 94,221 | 54,088 |
| England and Wales. | 68,948 | 47.401 |
| Northern Ireland. | 5,400 | 1,458 |
| Scotland. | 30,411 | 5,808 |
| Yugoslavis... | 98,786 | 19,279 |
| Nom-sovereign Countrips |  |  |
| *Channel Islands (U.K.). | 75 | 110 |
| Faeroe Elands (Den.). | 540 | 36 |
| * Gibraltar (U.K.). | 2 | 24 |
| *Isle of Man (U.K.). | 227 | 48 |
| Svalbard and Jan Mayen Islands (Nor.). | 24,101 |  |
| Oceania |  |  |
| Sovereign Countries |  |  |
| -Australis, excl. aborigines. | 2,967,894 | 11,130 |
| *New Zealand...... | 103,736 | 2,594 |
| *Weatern Samos. | 1,097 | 122 |
| Non-boverigign Countidiss |  |  |
| American Samos (U.S.) | 7611,50027 |  |
| *British Solomon Islauds (U.K.). |  | $2^{133}$ |
| *Canton and Enderbury (U.K. and U.S.) |  |  |
| *Christmse Island (Aust.) . . . | 525 |  |
| - Cocos (Keeling) Islands (Aust.). |  |  |  |
| *Cook Ialanda (N.Z.) . | $\begin{array}{r}90 \\ \hline \text { 20 }\end{array}$ |  |
| *Fiji Islands (U.K.)...) | 7.015 | 449 82 |
| French Polyuesia (Fr) | 1,544 ${ }^{82}$ |  |
| *Gilbert and Ellice Islands (Br.) | 342 |  |
| Guam (U.S.) ........ | 212 72 <br> 8  |  |
| *Nauru (Aust., N.Z. and U.K.) | 8 5 <br> 7008  |  |
| New Nalinea (Aust | $\begin{array}{r}7.202 \\ 900 \\ \hline 1899\end{array}$ |  |
| *New Hebrides (U.K. and Fr.) | 5,700 $\quad$ 86 |  |
| *Niue (N.Z.)......... | 100 |  |
| * Norfolk Island (Aust.) | 687 88 |  |
| Pracife Islands (U.S.) |  |  |  |
|  | 88, 109 |  |
| *Piteairn (U.K.). <br> *Tolelan torinds (Niz) |  |  |
| Tokelau hianda (N.Z.) <br> *Tonga (U.K.) | 270 | 71 |
| Union of Soviet Soclalist Eepubiles |  |  |
| Union of Soviet Socialist Republics. | 8,649,539 | 227,687 |

[^71]
## CHAPTER IV.-IMMIGRATION AND CITIZENSHIP

## CONSPECTUS

|  | Page |  | Page |
| :---: | :---: | :---: | :---: |
| Part I.-immigration and Emigration. | 215 | Part II. Canadian Citizenship. . | 228 |
| Section 1. Lmmigratlo: Policy and Administration... | $\bigcirc 15$ | Section l. The Canadian Citizenghip Act | 228 |
| Section 2. Immigration Statietica... | 217 | Section 2. Cavadian Citizenghip |  |
| Section 3, Emigration Statigrics.. | 227 | Statiatics.. | 230 |

The interpretation of the symbols used in the tables throughout the Year Book
will be found on $p$. Biti of this volume.

## PART I.-IMMIGRATION AND EMIGRATION*

## Section 1.-Immigration Policy and Administration

Policy.-Traditionally, Canada has sought to increase its population through immigration in order to expand the domestic market, reduce per capita costs of administration, stimulate economic activity by providing new skills, ideas and enthusiasm, and support a higher level of cultural independence and creativity. Canadian experience indicates that a substantial volume of immigration is highly desirable.

New population cannot be added haphazardly without regard to their means of subsistence or their effect on Canadian life. Technological change and the development of Canadian society to its present complex state require that to be able to establish themselves successfully new settlers must be economically competitive in terms of education, training, skills and personal qualities. Over the years, Canada has endeavoured to acquire immigrants who were adaptable to Canadian life. Such persons, finding familiar institutions in Canada, feel more at home and this assists in their establishment in the new life they find here. Canada makes every effort to sustain the movement of immigrants from countries having like economic, social and political backgrounds. On the other hand, qualified people from other countries can integrate successfully into Canadian society and the existing immigration Regulations recognize this principle. People anywhere in the world have an opportunity to immigrate to Canada if they demonstrate their suitability for life in this country and are likely to become established without hardship to themselves or disruption to the communities in which they settle.

The core of Canada's immigration policyt is contained in the Regulations introduced with effect from Feb. 1, 1962. Those persons who are eligible to apply for permanent admission to Canada are specified. They include anyone, regardless of origin, citizenship, country of residence or religious belief, who is personally qualified by reason of education, training, skills or other special qualifications to become satisfactorily established in Canada. In practice, the personal qualifications and attributes of the applicant for admission are related to the needs and interests of Canadian society in any of its diversities-economic, social or cultural.

[^72]Other provisions of the present Regulations enable the families of persons approved for admission under these terms to accompany them. When in Canada, a permanent resident may bring his spouse and dependent children as well as certain other close relatives to Canada. Except in some circumstances, at the time of writing, no special criteria apply in the case of these immigrants. All must be in good health and of good character and be in possession of such documentation as the Regulations prescribe. Sponsors must be able to provide adequate care and maintenance for those for whom they apply. A revision of these Regulations is proposed in the White Paper on Immigration mentioned below.

In addition, Canada has on many occasions since the end of World War IX sanctioned the entry of thousands of refugees. This is a humanitarian movement and is tangible evidence of Canada's recognition of its responsibilities in the international community. A conservative estimate of the number of refugees admitted since 1945 is 300,000 .

Administration.--The Canada Immigration Division of the Department of Manpower and Immigration administers the Immigration Act and Regulations. The White Paper on Immigration which the Prime Minister, in December 1964, announced would be prepared for presentation to Parliament was tabled in the House of Commons on Oct. 14, 1966. It provides a statement on the Federal Government's views on immigration policies and procedures in relation to national problems and national interests. It is expected that discussion of the White Paper, both in Parliament and by the public, will give rise to a consensus on the nature of changes required in immigration policy, procedures and legislation.

During 1964 and 1965, the Immigration Division was reorganized along functional lines to make its operation more consistent with its primary objective, which is to attract to Canada as many skilled persons as the economy can absorb, and to equip it to meet the challenges of the years ahead and thus give better service to immigrants and to the Canadian public. The reorganization involved more decentralization of authority, the stepping up of promotional activities overseas, the opening of new offices and the recruitment of new, highly qualified staff.

In January 1966, the Federal Government announced the proposed conversion of the Department of Citizenship and Immigration into a new Department of Manpower and Immigration. The establishment of the new Department became effective on Oct. 1, 1966 following proclamation but, at the time of writing, some administrative arrangements remained to be resolved and the planned new organizational structure for the Immigration Division must be regarded as tentative only, even though part of it became effective on Aug. 1, 1966. Under the plan, the Immigration Division will have three main Branches: (1) the Planning Branch, responsible for the development of the immigration program, for the evaluation and co-ordination of the factors affecting the program, and for the analysis of the results achieved; (2) the Foreign Branch, responsible for the selection of immigrants and for most other activities of the Division outside of Canada; and (3) the Home Branch, responsible for the admission and reception of, and assistance to, immigrants on their arrival in Canada, the enforcement of the Immigration Act and Regulations and the counselling of exceptional problem cases. A former, important part of the activities of the Immigration Division was the placement and settlement of immigrants in employment in Canada. This activity, along with the immigration officers who were trained specialists in the work, is being transferred to the Canada Manpower Division of the Department.

In June 1964, Mr. Joseph Sedgwick, Q.C., was asked by the Federal Government to inquire into allegations made in the House of Commons and elsewhere that certain aliens had been unlawfully detained and deprived of access to counsel and also to inquire into the general procedures being followed in relation to the arrest, deportation and prosecution of persons illegally in Canada. In April 1965, Mr. Sedgwick presented Part I of his report, dealing only with the allegations concerning detainees. In effect, the report upheld the actions of the Immigration Division in that Mr. Sedgwick found that the allegations were
ill-founded or exaggerated and that the proceedings leading to the making of orders for deportation in a majority of cases were above reproach. In a very few cases he criticized administrative delays but expressed the opinion that the fault did not arise from any intention to act in an improper manner. In February 1965, Mr. Sedgwick's terms of reference were expanded to include an examination of the extent and use of the discretionary powers which immigration legislation confers on the Minister in charge of immigration, and also an investigation of the basis and operation of the Immigration Appeal Board. The second part of Mr. Sedgwick's report was tabled in the House of Commons on Mar. 17, 1966, and the recommendations it contained were placed under study. On Oct. 20, 1966 it was agreed to establish a Special Joint Committee of the Senate and the House of Commons to examine and report upon the White Paper and Mr. Sedgwick's two reports.

On July 6, 1966, the Minister introduced a Bill in the House of Commons "to make provision for appeals to an Immigration Appeal Board in respect of certain matters relating to immigration" It is expected that the Bill will be debated by Parliament before the end of 1966 .

The Minister, on July 8, 1966, announced to Parliament a new policy concerning persons who come to Canada as visitors and then attempt to remain as immigrants, thus circumventing the normal immigration channels. He set out clear and distinct criteria under which such persons already in Canada will be allowed to remain here, and separate and more exacting criteria for future visitors attempting to remain here without undergoing immigrant selection and examination procedures abroad.

At the same time the Minister announced the Government's intention to introduce changes in the immigration Regulations governing the admission of persons sponsored by relatives in Canada. The changes are to provide uniform standards for admission regardless of the immigrant's citizenship or country of residence. The changed sponsorship provisions will be made universally effective by the removal of certain security limitations on the admission of relatives from Eastern Europe and from other countries where such limitations now exist. The proposed changes are detailed in the White Paper on Immigration.

In March 1966, three amendments were made to the immigration Regulations. Two were for the purpose of eliminating delays and inconvenience caused by documentation procedures involving transportation companies. The third removed the need for permanent legal residents of the United States, who are not United States citizens, to obtain a passport from their country of citizenship in order to be admitted to Canada.

There are 33 visa offices located abroad at: London, Liverpool, Leeds, Bristol, Glasgow, Belfast, Dublin, Paris, Bordeaux, Marseille, Brussels, Berne, The Hague, Copenhagen, Cologne, Berlin, Hamburg, Munich, Stuttgart, Vienna, Oslo, Stockholm, Helsinki, Lisbon, Madrid, Rome, Milan, Athens, Cairo, Tel Aviv, New Deihi, Tokyo and Hong Kong. The Regional Immigration Headquarters for Continental Europe in Geneva is an administrative centre which does not issue visas. Four offices in the United States-at New York, Chicago, San Francisco and Denver-furnish information and counselling but do not issue visas. The possibility of opening visa offices in Birmingham and Manila is being investigated and ${ }^{\text {a }}$ study has been begun to determine the feasibility of a new office in the Middle East area. Personnel at all posts are kept in close touch with economic conditions in Canada and thus are able to advise immigrants regarding their prospects for successful establishment. Examination of immigrants and visitors is carried out at 552 ports of entry on the Canadian coasts, at points along the International Boundary, at certain airports and at certain inland offices.

## Section 2.-Immigration Statistics

Table 1 shows the number of immigrants arriving in Canada in each year since 1913, the peak year of immigration into the country. Table 2 shows the number and distribution of immigrants in the population of Canada on the latest decennial census date, June 1, 1961, by period of arrival.

## 1.--Immigrant Artivals, 1913-65

Note.-Figures for 1852-98 are given in the 1942 Year Book, p. 153, and for 1894-1912 in the 1948-49 edition, p. 175.

| Year | Arrivals | Year | Arrivals | Year | Arrivals | Year | Arrivala | Year | Arrivals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. |  | No. |  | No. |  | No. |  | No. |
| 1913 | 409.870 | 1924. | 124,164 | 1935 | 11.277 | 1946 | 71,719 | 1957 | 282,164 |
| 1914 | 150,484 | 1925 | 84,907 | 1936 | 11,643 | 1947 | 64,127 | 1968 | 124,851 |
| 1915. | 30,665 | 1926 | 135,982 | 1937 | 15,101 | 1948 | 125,414 | 1959 | 108,928 |
| 1916. | 55,914 | 1827. | 158,886 | 1938. | 17,244 | 1949 | 95,217 | 1960 | 104,111 |
| 1917 | 72.910 | 1928 | 186,783 | 1939 | 16,994 | 1950 | 73,912 | 1961 | 71,689 |
| 1918 | 41,845 | 1929 | 164, 093 | 1940 | 11,324 | 1951 | 194,381 | 1962 | 74.586 |
| 1919 | 107,698 | 1930 | 104, 806 | 1941 | 9,329 | 1952 | 164, 498 | 1963 | 93,151 |
| 1920 | 138, 824 | 1931. | 27.530 | 1942 | 7.576 | 1953 | 168,868 | 1964 | 112,606 |
| 1921 | 91,728 | 1932 | 20.591 | 1943 | 8,504 | 1954 | 154,227 | 1965 | 146,758 |
| 1922 | 64,224 | 1933. | 14,382 | 1944 | 12,801 | 1955 | 109,940 |  |  |
| 1923 | 133,729 | 1934 | 12,476 |  | 22,722 | 1956 | 164,857 |  |  |

Table 2 shows that, according to census figures, $1,507,116$ persons reported that they had come to Canada between Jan. 1, 1946 and June 1, 1961. These immigrants constituted about 75 p.c. of the total number of immigrants who arrived in Canada during that period. According to the records of the Department of Manpower and Immigration, 2,033,598 persons entered Canada as immigrants during the period 1946-61. The difference between this total and the $1,507,116$ postwar immigrants reported in the 1961 Census, amounting to 526,482 persons, represents the losses due to death and emigration among the postwar immigrant arrivals up to June 1961. Since this difference is arrived at by comparing statistics derived from two different sources, it must be taken as only an approximate measure of these losses. It is estimated that deaths of immigrants arriving since 1946 would not exceed 86,000 by June 1961. Hence it would appear that roughly 440,000 emigrated in the period between January 1946 and June 1961, or slightly more than one fifth of the total arrivals over this period.

The 440,000 postwar immigrants who appear to have emigrated from Canada up to June 1961 would thus constitute a little over half the total estimated emigration from Canada since 1946, according to data on emigration used in the preparation of annual population estimates. In this connection it might be mentioned that a substantial element in total Canadian emigration is the movement of Canadian-born persons to the United States, some 387,000 entering the United States as immigrants between July 1946 and July 1961 according to the United States Immigration Service records (aee p. 227).

## 2.-Immigrant Population, by Period of Immigration and by Province, Census 1961

\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline Province or Territory \& Before 1930 \& 1931-40 \& 1941-45 \& 194b-50 \& 1951-55 \& 1956-61 ${ }^{1}$ \& 1946-614 \& Total <br>
\hline \& No. \& No. \& No. \& No. \& No. \& No. \& No. \& No. <br>
\hline Newfoundland \& 1,356 \& 339 \& 338 \& 1,317 \& 1,230 \& 1,689 \& 4.236 \& 8.268 <br>
\hline Prince Edward I \& 1,170 \& 217 \& 117 \& 439 \& ${ }^{452}$ \& 8. 597 \& 1,488 \& 2,992
34.188 <br>
\hline Nova Scotia \& 14,752 \& 2,185 \& 1,079 \& 4,434 \& 5,281
8888 \& 6,457
4,379 \& 16,172
10,450 \& 34,168
23,283 <br>
\hline New Brunswi \& 10,498 \& 1,451 \& 888
5.321 \& 3,184
38,452 \& 2,887
87873 \& 4,379
121,437 \& 10,450 \& -388,449 <br>
\hline Qaebec \& 121,164 \& 14,202 \& 5.321 \& -38,452 \& 87,873
323,528 \& 121,437 \& 247,762
833,303 \& 1,353,157 <br>
\hline Ontario \& 462,705 \& 41,959 \& 15,190 \& 169.044 \& 323,528 \& $\begin{array}{r}340,731 \\ \\ 25 \\ \hline\end{array}$ \& 833,303
62.498 \& 1, 1699,998 <br>
\hline Manitoba \& 101,758 \& 4,259 \& 1,483 \& 15,925 \& 21, ${ }^{2134}$ \& 25,439
11 \& 62,498

28 \& | 169,998 |
| :--- |
| 149 | <br>

\hline Saskatchew \& 116,192 \& 3,170 \& 1,034 \& 8.124 \& $\begin{array}{r}\text { 9,997 } \\ \hline 88,283\end{array}$ \& | 11,372 |
| :--- |
| 47 |
| 107 | \& \& ${ }_{288} 1489$ <br>

\hline Alberta \& 156,324 \& 8,446 \& 2,420 \& 25,326 \& 48,283 \& 47,970 \& 121,559 \& - ${ }_{423}$ <br>
\hline British Columbia \& 229,790 \& 1t,300 \& 4,498 \& 37, 296 \& 85.947 \& 74,301 \& 177, 1.724 \& 42,714 <br>

\hline Yukon Territory \& | 867 |
| :---: |
| 425 | \& 81

114 \& 42
37 \& 178 \& 626
472 \& 833
737 \& 1,724
1,387 \& 1,963 <br>
\hline Northwest Territories \& 425 \& 114 \& 37 \& \& \& \& \& <br>
\hline Canada \& 1,216,999 \& 87,7e3 \& 32,445 \& 308,384 \& 547,190 \& 635,942 \& 1,567,114 \& 2,844,2** <br>
\hline
\end{tabular}

${ }^{1}$ Up to the date of the Censua, June 1, 1961.
Recent Immigration.-The extent of immigration to Cansda in any period is affected both by domestic conditions and by conditions abroad. However, these influences
are seldom immediately decisive. News of good economic conditions in Canada predisposes people in favour of this country but, because the immigration process usually takes several months, actual immigration is not always fully coincidental with the economic situation, so that immigration may at times be slight in good years but appear unduly heavy in less buoyant periods. The time-lag caused by selection, medical examination and documentation is unavoidable. Transportation is often another delaying factor and to these considerations must be added the effect of seasonal unemployment in Canada, which tends to discourage immigration during the months from November to April.

In comparison with the relatively high levels of immigration in the three years immediately following the outbreak of the Korean War in 1951, immigration dropped off slightly from 168,868 in 1953 to 154,227 in 1954 . In 1954 a minor setback occurred in the Canadian economy and this resulted in a very sharp decline of some 44,000 in the 1955 immigrant intake. However, with the return of better times in North America and the deterioration of the political situation in Europe, immigration rose by $55,000 \mathrm{in} 1956$. The Hungarian revolution and the Suez crisis of 1956 had a sharp impact on Canadian immigration in 1957 when 282,164 persons were admitted, including 31,643 from Hungary and 108,989 from the British Isles. This was the largest number of immigrants to enter Canada since 1913.

The conclusion of the Suez affair and the suppression of the Hungarian revolt restored some measure of calm in Europe. Canads's economy suffered a recession in 1956 and 1957 while Europe's economic position improved, as a result of which only 124,851 immigrants came to Canada in 1958. Britain's recovery from the War and its aftermath was reflected in the fact that, for the first time in the postwar years, the British Isles group of arrivals was not the largest-persons from Italy were in first place, numbering 27,043 compared with 24,777 from the British Isles. Total arrivals dropped from 106,928 in 1959 to 104,111 in 1960 and to 71,689 in 1961 and during these years the numbers from Italy remained in first place. The main contributing factors to the decline in number of immigrant arrivals after 1958 were: (1) the upsurge in the economies of those European countries from which Canada has received the majority of its immigrants and (2) the increasing emphasis placed on selecting the immigrant who has sufficient funds and the necessary knowledge to establish himself in a business or industry of his own, as well as on the immigrant with special skills or qualifications which would permit his ready integration into the Canadian labour force.

The upward trend since 1962, when immigrants from the British Isles again headed all groups, reflects an intensification of promotional and recruitment activities in the main source countries and an expansion of immigration facilities in other areas of the world which previously have contributed few immigrants to Canada. During 1965, immigrants totalled $146,758,30.3$ p.c. more than in the previous year. There was an increase from almost every country but the major source countries were, in order: Britain, Italy, United States, Germany, France and Portugal. Immigration from the United States increased 20.5 p.c. over 1964 and was the highest in any one year since the end of the Second World War.

Ontario and Quebec continued to receive the major share of the immigrants; Ontario received 54.3 p.c., Quebec 20.7 p.c., British Columbia 12.6 p.c., the three Prairie Provinces 10.0 p.c. and the Atlantic Provinces 2.4 p.c. The total movement was divided almost equally between labour force entrants and non-workers; 74,195 were classed as workers and 72,563 as dependants or non-workers. It is also significant that of the immigrants who entered the labour force, 67 p.c. were in the 'more skilled' categories, compared with 59 p.c. in these categories in 1964.

Analyses of Immigration in 1963-65.-Analyses of the content of the immigration movement during the years 1963, 1964 and 1965 are given in Tables 3 to 10, and the numbers of persons deported from Canada for various reasons for the same years in Table 11.

Table 3 classifies immigrant admiseions by country of last permanent residence. During the three-year period shown, 27.2 p.c. of the immigration flow came from Britain and the Republic of Ireland, 45.5 p.c. from Continental Europe, 11.2 p.c. from the United States and 16.1 p.e. from all other countries.

## 3.-Immigrant Arrivals by Country of Yast Permanent Residence, 1968-65

Note.-Comparable figures from 1946 are given in the corresponding table of previons Year Books beginning with the 1951 edition; figures in less detail for $1989-45$ appear in the 1950 edition, $\mathbf{p}$. 186.

| Country | 1963 | 1964 | 1965 | Country | 1963 | 1964 | 1985 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. |  | No. | No. | No. |
| Commenwealth - |  |  |  | Earope-concluded |  |  |  |
| British Isles $\rightarrow$ |  |  |  | Germany | 6,744 | 5,982 | 8,927 |
| England. | 16,562 | 20.481 | 28,820 | Greece. | 4,759 | 4,391 | 8,642 |
| Northern | 1,743 | 1,847 | 1,934 | Hungary .................... | ${ }_{5} 55$ | 424 | 453 |
| Scotland | 6,074 | 6,698 | 8,363 | Italy ........................ | 14.427 | 18,297 | 26,398 |
| Wales | 201 | 235 | 682 | Netherla | 1,728 | 2,029 | 2,619 |
| Lesser Isleg | 23 | 17 | 58 | Poland.................... | 1,482 | 1,944 | 1,975 |
| Totals, British Isles.... | 24,603 | 29,278 | 39,857 | Portugal............... | 4,000 | 8,309 | 5,734 |
|  |  |  |  |  | 578 | 717 | 859 |
|  |  |  |  |  | 508 | 604 | 692 |
| Hong K | 1,376 | 1,855 | 2,150 | Spain | 498 | 64 | 837 |
| India... | 1.737 | 1,154 | 2, 241 | Yugosl | 881 | , 1876 | 2,169 |
| Malta | 869 | 1,162 | 1,055 | Other. | 227 | , 275 | 330 |
| New Zealand | 316 | 448 | 561 |  |  |  |  |
| West Indies. | 2,227 | 2,072 | 2.926 | Nortin |  |  |  |
| Other Commonwealth | 1,289 | 1.866 | 2,134 | Menco St... | 11,739 | 12,565 | 15,148 |
| Totals, Cemmonwealth. | 32,425 | 40,326 | 55,075 | Other . . . . . . . . . . . . . . . . | 176 | 174 | 221 |
|  |  |  |  |  | 1,103 | 1,648 | 1,862 |
| Eepublic of Ireland......... | 590 | 680 | 861 | Middle East-- |  |  |  |
| Africal. | $688{ }^{2}$ | 1,5983 | 1,613 ${ }^{4}$ | Egypt...................... | 1,476 | 1,855 | 1,378 |
| Asia ${ }^{1}$ | 629 | 760 | 2,157 | Lebsac | 458 | 347 | 602 |
| Europe- |  |  |  | Other........................ | 225 | 379 | 825 |
| Austria. | 799 | 1,099 | 1,472 | Other Countries............. | 9 | - | 5 |
| Belpium | 935 | 989 | 977 |  |  |  |  |
| Finland | 251 5,569 | 353 4,542 |  |  |  |  |  |
| France. | 5,569 | 4,542 | 5,225 | Totals, All Countries.... | 33,151 | 112,605 | 146,758 |
| ${ }^{1}$ Excludes Commonweal 417 from the Republic of Sou | untrie írica. |  | 2 Includ Includes | 298 from the Republic of Sou 545 from the Republic of South | Árica. Africa. |  | Includes |

Of the immigrant arrivals in $1965,36.1$ p.c. were born in Commonwealth countries or in the Republic of Ireland compared with 35.6 p.c. in 1964 and 35.2 p.c. in 1963; 23.2 p.c. were born in Italy or Greece, 8.6 p.c. in Germany, France or the Netherlands, 8.2 p.c. in the United State8, 5.4 p.e. in Spain or Portugal and 3.9 p.c. in Poland or Yugoslavia.

## 4.-Birthplaces of Immigrant Arrivals, 1963-65

Nore.-Figures from 1942 are given in the corresponding table of previous Year Books beginning with the 1948-49 edition.


[^73]
## 4.-Birthplaces of Immigrant Arrivals, 1363-65-concluded


${ }^{1}$ Excludes Commonwealth countries.
s In both Europe and Asia.
Immigrants of Continental European origin comprised 54.9 p.c. of the influx during 1965 and those of British origin made up 32.2 p.c. Proportions of Continental Europeans in 1964 and 1963 were 57.6 p.c. and 57.4 p.c., respectively, and of British origin 32.1 p.c. and 33.4 p.c. in the same years.

## 5.-Origins of Immigrant Arrivals, 1963-65

Nore.-Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1939 adition.

| Origin | 1963 | 1964 | 1965 | Orizin | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. |  | No. | No. | No. |
| BritishEnglish Irish. Scottish |  |  |  | Conttnental Europeanconcluded Scandinavian- |  |  |  |
|  | 17,868 4,767 | 21,336 5,229 | 28,810 6,237 |  |  |  |  |
|  | 7,734 | 8,637 | 10.692 | Danish.......... | 743 | 852 | 1,057 |
|  | 731 | 997 | 1,482 | Iolandi | 18 | 17 |  |
| Totals, British | 31,100 | 36,193 | 47,221 | Swedish................Spanish | 3951,468 | 452$1+842$ | 3985$1+909$ |
|  |  |  |  |  |  |  |  |
| Centhuental European- | 51 |  |  | Swiss ${ }^{\text {U }}$. | 6612152.449 | $\begin{aligned} & 883 \\ & 202 \\ & \end{aligned}$ | 1,194 |
|  |  |  |  |  |  |  | 283 |
| Albanian... |  | 29751 | 31 | Yugoslavic ${ }^{\text {c }}$. . . . . . . . . . . |  | 3,116 | 3,220 |
| Austrian. | 588 |  | 819675 |  |  |  |  |
| Beligian.. |  | 723 |  | Totals, Continental European. | 53,47\% | 64,836 | 80, 448 |
| Bulgarian | 28 160 | 35 237 | 75 308 |  |  |  |  |
| Estonian. | 69 | 57 | 65 | Other- |  |  |  |
| Finnish. | 325 | 476 | 656 | Arabian............... | $\begin{array}{r} 154 \\ 932 \\ 1,571 \end{array}$ | 214855 | 263887 |
| French. | 3,291 | 4,044 | 4,4089,832 |  |  |  |  |
| German | 6,550 | 7,991 |  | Armenan.................. |  | 3.2102.077 | 5,234 |
| Greek. | 5,647 | 5.2001.054 | 6.730 | Est Indian. <br> Indian (A merican) | $\begin{aligned} & 1,571 \\ & 1,386 \end{aligned}$ |  | 3,49132 |
| Hungarian |  |  | $\begin{array}{r} 1.323 \\ 29,360 \end{array}$ |  | ${ }^{21}$ | 2,077 |  |
| Italisan. | $\begin{array}{r} 16,194 \\ 2,180 \end{array}$ | 21,508 |  | Indian (A merican) <br> Japanese. | 199 | 28 163 | 32 219 |
| Jewish.. |  | 3, 113 | 2.816 | Lebanese. Mexican. | 59124 | 6352727 | 76355 |
| Latvian. | $\begin{array}{r} 2,180 \\ 92 \end{array}$ |  | 979511 |  |  |  |  |
| Lithuanian | 7320 | $\begin{aligned} & 84 \\ & 13 \end{aligned}$ |  | Negro <br> Syrian | 2,453 | 2,627 | 4,065 |
| Lurembourge |  |  |  |  | 1310 | $\begin{array}{r}178 \\ 341 \\ \hline\end{array}$ | 241 |
| Maltese. | 9082,181 | 1,200 | 1,133 | Sytian Turkish. |  |  | - 527 |
| Nether |  | $\begin{array}{r} 2,621 \\ 8,109 \\ 165 \\ 201 \\ 201 \end{array}$ | $\begin{array}{r} 2.862 \\ 7.089 \\ 155 \\ 260 \\ 2.85 \end{array}$ | Totals, Other <br> Grand Totals | 825 | 1,216 | 3,117 |
| Portuguese | $\begin{array}{r} 2,069 \\ 4,732 \\ 163 \\ 177 \end{array}$ |  |  |  | $\begin{array}{\|c} \hline 8,574 \\ \hline 8,151 \end{array}$ | $\frac{11,571}{112,806}$ | $\frac{18,894}{146,758}$ |
| Romanian. |  |  |  |  |  |  |  |
| Rusaian. |  |  |  |  |  |  |  |

[^74]${ }^{2}$ Reported as Swist origin but evidently one of the constituent races wuch as German, French, Italian, eto

Out of every 100 immigrants admitted to Canada during the three-year period 1963-65, 29 were British subjects, 18 were citizens of Italy, 10 of the United States, five of Germany, five of Greece, and five of Portugal; many other nationalities made up the remaining 28.

## 6.-Citizenship of Immigrant Arrivals, 1963-65

Note.-Figures from 1930 are given in the corresponding table of previous Year Books beginning with the 1936 edition.

| Country of Citizenship | 1963 | 1964 | 1965 | Country of Citizenship | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. |  | No. | No. | No. |
| Australia. | 1,440 | 1,896 | 2,322 | Netherlands. | 1,773 | 1,989 | 2,525 |
| Austria. | 529 | 658 | 770 | New Zealand | 377 | 457 | 642 |
| Belgium. | 528 | 675 | 645 | Norway. | 285 | 268 | 317 |
| Britain and colonies | 28,981 | 32,773 | 42,785 | Pakistan | 137 | 307 | 470 |
| Central America | 27 | 21 | 25 | Poland. | 1,539 | 1,995 | 2,027 |
| Ceylon. | 25 | 78 | 141 | Portugal. | 4,281 | 5,721 | 6,583 |
| China. | 911 | 2,127 | 3,375 | South Africa | 339 | 455 | 581 |
| Czechoslovakia | 25 | 92 | 80 | South America | 594 | 732 | 928 |
| Denmark | 593 | 716 | 874 | Southern Rhodesia | 120 | 93 | 56 |
| Egypt. | 1,187 | 1,532 | 1,270 | Spain. | 1,043 | 1,123 | 1,414 |
| Finland | 281 | 401 | 558 | Sweden | 183 | 217 | 240 |
| France. | 2,772 | 3,417 | 3,691 | Switzerland | 603 | 760 | 1,144 |
| Germany | 4,740 | 4,866 | 7,031 | Turkey | 327 | 395 | 662 |
| Greece | 5,385 | 4,819 | 6,181 | Union of Soviet Socialist |  |  |  |
| Hungary | 551 | 460 | 592 | Republics. | 75 | 80 | 159 |
| India. | 860 | 1,309 | 2,386 | United States | 10,313 | 11,350 | 13,857 |
| Ireland, Republic of | 759 | 908 | 1,311 | Yugoslavia. | 978 | 1,519 | 1,886 |
| Israel | 746 | 929 | 837 | Other African. | 46 | 134 | 90 |
| Italy. | 15,589 | 20,720 | 28,397 | Other Asian. | 253 | 622 | 2,441 |
| Japan. | 171 | 140 | 188 | Other European | 64 | 76 | 712 |
| Lebanon. | 488 | 385 | 637 | Stateless. | 2,394 | 2,661 | 2,526 |
| Luxembourg | 21 | 12 | 11 | Other | 431 | 1,624 | 2,486 |
| Moroce | 287 | 980 | 775 | Totals | 93,151 | 112,606 | 146,758 |

Sex distribution of recent immigrant arrivals is shown in Table 7. In the three years 1963-65, adult males comprised 35.5 p.c. of the immigrants, adult females 36.5 p.c. and children under 18 years of age the remaining 28.0 p.c. Without relation to age, 50.2 p.c. of the newcomers were females.

## 7.-Sex Distribution of Immigrants as Adult Males, Adult Females and Children, 1963-65

Note.-Figures from 1930 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

| Item | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: |
|  | No. | No. | No. |
| Males. ......... | 45,163 | 55,825 |  |
| Under 18 years | 12,418 | 16,321 | 21,761 58,946 |
| Adult. | 37, 745 | 39,504 |  |
| Females.......... | 47,988 | 56,781 | 72,051 |
| Under 18 years Adult......... | 12,094 35,894 | 15,344 41,487 | 20,561 51,490 |
| Totals, Immigrants | 93,151 | 112,606 | 146,758 |

The number of female immigrants coming into Canada was higher than the number of male immigrants in every year from 1957 to 1964. In 1965, however, the excess of males was 2,656 , although in the age groups $15-19,20-24$ and over 50 years the number of females exceeded that of males. In the single category, males exceeded females in all age groups up to 40 years but in the married category females exceeded males by 2,409 , in the widowed category by 2,794 and in the divorced or separated category by 534 . Of all persons arriving in 1965 who were 15 years of age or over, 54.5 p.c. were married, 40.2 p.c. were single and 5.3 p.c. were widowed, divorced or separated.
8.-Marital Status of Immigrant Arrivals, by Ser and Age Group, 1965

| Sex and Age Group | Single | Married | Widowed | Divorced | Separated | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. |
| Males- |  |  |  |  |  |  |
| 0-14 уеягя...................... | 18,977 | - | - | - | - | 18,977 |
|  | 5.813 | 76 | - |  | -10 | 5,889 |
| 20-24 | 9.738 | 2,614 | 3 | 12 | 10 | 12,377 |
| 25-29 " | 6,689 | 6,561 | 7 | 85 | 33 | 13,375 |
| 30-39 " | 2,926 | 11,025 | 24 | 194 | 72 | 14,241 |
| 40-49 | 379 | 4.732 | 28 | 97 | 48 | 5,284 |
| 50-59 * | 90 | 2,223 | 101 | 38 | 12 | 2,464 |
| 60 years or over. | 65 | 1,522 | 440 | 45 | 28 | 2,100 |
| Totals, Males | 44,677 | 28,753 | 613 | 471 | 203 | 74,767 |
| Fenales- |  |  |  |  |  |  |
| 0-14 years..................... | 17,845 | 3 | - | - | - | 17.848 |
|  | 4,665 | 1,482 | - | 3 | 2 | 6.152 |
| 20-24 " | 8,838 | 6,554 | 11 | 39 | 24 | 13,466 |
| 25-29 | 3,967 | 7.164 | 22 | 95 | 38 | 11.286 |
| 30-39 ${ }^{\text {a }}$ | 2,118 | 9,075 | 82 | 235 | 77 | 11,585 |
| 40-49 " | 457 | 3,668 | 277 | 213 | 75 | 4,690 |
| 50-59 " | 194 | 2,004 | 934 | 157 | 75 | 3.364 |
| 60 years or over. | 202 | 1,212 | 2,071 | 104 | 71 | 3,860 |
| Totals, Females. | 36,284 | 31,15\% | 3,397 | 846 | 362 | 74,051 |

Destinations and Occupations.-Upon arrival in Canada, immigrants are asked to state their intended destinations. According to these records, Ontario absorbed by far the highest proportion of arrivals in the three-year period 1963-65-53.6 p.c. of all the males and 54.4 p.c. of all the females. Quebee was the second province of destination, receiving 23.4 p.c. of the males and 21.8 p.e. of the females, followed by British Columbia with 11.0 p.c. of the males and 11.7 p.c. of the females. The proportions intending to settle in the Prairie Provinces were 9.5 p.c. and 9.7 p.c., respectively, and in the Atlantic Provinces 2.4 p.c. and 2.3 p.c., respectively. The provincial distribution has changed little from year to year throughout the whole postwar period.
9.-Intended Province of Destination of Male and Female Immigrants Admitted to Canada, 1963-65

| Province or Territory | 1963 |  |  | 1964 |  |  | 1965 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Males | Femalea | Total | Males | Females | Total | Males | Femalea | Total |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| Newfoundland. | 184 | 165 | 349 | 224 | 221 | 445 | 303 | 301 | 604 |
| Prince Edward Island. | 33 | 45 | 78 | 33 | 46 | 79 | 63 | 74 | 137 |
| Nova Scotia.. | 604 | 594 | 1,198 | 601 | 588 | 1,189 | 867 | 745 | 1,612 |
| New Brunswick | 409 | 360 | 769 | 320 | 376 | 696 | 573 | 501 | 1,074 |
| Quebee. | 11,759 | 11,505 | 23,264 | 13,400 | 12,673 | 25,973 | 15,942 | 14,404 | 30,346 |
| Ontario. | 23,515 | 25,701 | 49.216 | 30,358 | 31, 110 | 61,468 | 40.357 | 39,345 | 79,702 |
| Manitoba... | 1,431 | 1,361 | 2,792 | 1,581 | 1,425 | 3,006 | 2,053 | 1,895 | 3,948 |
| Saskatchema | 1.695 2.253 | 743 2.478 | 1,438 | . 883 | , 9222 | 1,795 | 1,238 | 1.411 4.074 | 2,649 |
| Arerta Coli..... | 2,253 | 2,478 | 4,731 9,254 | $\mathbf{2}, 594$ $\mathbf{5} 80$ | $\underset{6,534}{2,927}$ | 5,521 | 3.975 8.269 | 4,074 9,233 | 8,049 18,502 |
| Yukod and Northwest Territories. | 29 | 5, 33 | 9128 | , 51 | $\begin{array}{r}\text { 6, } \\ \hline 59\end{array}$ | 12,32 110 | 9, 67 | $\begin{array}{r}9,238 \\ \hline 68\end{array}$ | 18,513 135 |
| Canada | 45,163 | 47,988 | 93,151 | 65,825 | 56,781 | 112,606 | 74,76\% | 72,051 | 146,758 |

In like manner, immigrant artivals are asked to record the occupations they intend to follow in Canada. Approximately 50.6 p.c. of the persons admitted in 1965 declared that they would enter the labour force. The other 49.4 p.c. were wives, children and other dependants or were retired persons. Of the male workers, 23.7 p.c. were classed as managerial, professional and technical, 5.8 p.c. were clerical workers, 5.0 p.c. were in service occupations, 41.3 p.c. were in manufacturing, mechanical and construction trades, 12.9 p.c.
were general labourers and 4.5 p.c. were farmers. About 22.0 p.c. of the female immigrants entering the labour force were intending to follow service occupations. Details are given in Table 10.

## 16. Intended Occupations of Male and Female Immigrants Admitted to Canada, 1944 and 1965



## 10.-Intended Occupations of Male and Female Immigrants Admitted to Canada, 1964 and 1965-continued

| Intended Occupation | 1964 |  |  | 1885 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Males | Fernales] | Total | Males | Females | Total |
|  | No. | No. | No. | No. | No. | No. |
| Workers-continued |  |  |  |  |  |  |
| Clerical | 2,522 | 5,409 | 7,381 | 2,369 | 6,939 | 9.915 |
| Bookkeepers, cashiers | 459 | 569 | 1.028 | 542 | $8{ }^{113}$ | 1.345 |
| Storekeepers, , ohipping clerks | 189 | $\begin{array}{r}15 \\ \hline\end{array}$ | 184 | 359 | 53 | 403 |
| Stenographers, typists. Other............... | $\begin{array}{r}\text { r } \\ 1,84 \\ \hline\end{array}$ | 3.466 1,359 | 3,540 3,179 | 7.79 2.027 | 4.343 1.731 | 4.413 3,758 |
| Transpertation. | 547 | 2 | 549 | 931 | 5 | 936 |
| Airertf operators. | 18 | - | 18 | 36 |  | 36 |
| Railway operstors. | 12 | - | 12 | 13 | 1 | 14 |
| Water transport. | 121 | 1 | 122 | 227 | 1 | 228 |
| Roded transport | 379 17 | - | 380 17 | 625 30 | $-{ }^{3}$ | 628 30 |
| Communication. | 102 | 117 | 218 | 109 | 158 | 257 |
| Commerctia | 1,476 | 640 | 1,916 | 1,624 | 861 | 2,435 |
| Auctioneers, canvassers, | 7 | 1 |  |  | - |  |
| Pediars, commercial travellers. | 54 | 2 | ${ }^{56}$ | 113 | 3 | 156 |
| Sules clerke, ealesmer. | 1,178 | 629 | 1,807 | 1,478 | 849 | 2,318 |
| Other. | 37 | 8 | 45 | 24 | 18 | 42 |
| Fluancial | 84 | 3 | 83 | 163 | 10 | 125 |
| Service and Recreation | 2,168 | 4,312 | 6,420 | 2,575 | 5,012 | 7,587 |
| Protective service | 139 | 4 | 134 | 166 | 6 | 172 |
| Cooks. | 456 | 99 | 555 | 611 | 128 | 739 |
| Domestic servants | 60 | 2.754 | 2.814 | 51 | 3.043 | 3,094 |
| Nurses' aides. | - | 29 | 29 | 33 | 292 | 325 |
| Waiters. porters. | 641 | 822 | 1.483 | 812 | 756 | 1,568 |
| Athletes, entertai | 80 | 34 | 114 | 102 | 4 | 146 |
| Other. | 741 | 570 | 1,311 | 800 | 743 | 1,543 |
| Farmers. | 2,157 | 37 | 2,234 | 2,201 | 7 | 2,362 |
| Lesters and Eelated Workers | 61 | - | 61 | 157 | 1 | 154 |
| Fisbermen, Hemters, Trappers. | 12 | - | 12 | 33 | $\sim$ | 33 |
| Miners, Well Drillers. | 114 | - | 114 | 238 | - | 287 |
| Censtruction. | 4,792 | 7 | 4,793 | 6,59\% | 2 | 6,601 |
| Carpeniera. | 1,336 | $\sim$ | 1,336 | 1.728 | 1 | 1,720 |
| Plumbers. | 348 | - | 348 | 51.5 | $\sim$ | 505 |
| Electricians | 747 | - | 747 | 1,030 | - | 1.050 |
| Painters. glaziers. | 699 | 6 | 705 | 72.8 |  | 710 |
| Bricklayers, stonemasons | 1,176 | - | 1,176 | 1.829 | - | 1,829 |
| Cement and concrete workers | 58 | 1 | 63 | 99 |  | 99 |
| Plasterers, jathers. | 98 | - | 98 | 136 | - | 136 |
| Sheet metal workers. | 239 | - | 230 | 370 | 1 | 371 |
| Other (excl. labourers). | 99 | - | 99 | 166 | - | 166 |
| Manufacturing and hiechanical. | 10,358 | 2,819 | 12,4\%7 | 11,685 | 2,381 | 17,566 |
| Food workers..... | 940 | 19 | 959 | 1, 133 | 37 | 1,170 |
| Ruhber workers. | 26 | 1 | 26 | + 42 |  | 42 |
| Leather workers. | 283 | 11 | 294 | 332 | 33 | 355 |
| Textile workers. | 194 | 91 | 285 | 222 | 152 | 374 |
| Tailors, Lurriers, | 756 | 1.745 | 2.5101 | 888 | 2.231 | 3. 119 |
| Woodworkers, sawyers. | 569 |  | 573 | 977 |  | 978 |
| Pulpand paper wirkera | 68 | 9 | 77 | 64 | 7 | 71 |
| Printers, hookbinders. | 315 | 31 | 346 | 455 | 50 | 505 |
| Furnacemen, moulders.. | 223 161 | 12 | 223 173 | 372 175 |  | 372 179 |
| Mawellers, watehtnakers. | 181 3,538 | 12 | 173 3.583 | 175 5.036 | 34 | 5. 178 |
| Mechanics, repairmen | 1. 860 | ${ }_{6}$ | 1.886 | 2,629 | 2 | 2.831 |
| Electrical, electronic workers | 1.746 | 20 | ${ }^{1} 766$ | 1,115 | 42 | 1.157 |
| Painters (excl. construetion). | 63 | 2 | 63 | 251 | 1 | 255 |
| Clay. glass, stone worters.. | 177 | 12 | 189 | 204 | 13 | 217 |
| Stationary enginemen. | 214 | - | 214 | $3 \%$ | 1 | 373 |
| Freight handlers. Other............ | 14 211 | -314 | 14 525 | 50 309 | 331 | 56 640 |

10.-Intended Occupations of Male and Female Immigrants Admitted to Canada, 1964 and 1865-concluded

| Intended Occupation | 186.4 |  |  | 1965 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Males | Females | Total | Males | Females | Total |
| No. No. No. No. No. No. |  |  |  |  |  |  |
| Workers-ooncluded |  |  |  |  |  |  |
| Labourers. | 5,558 | 178 | 5,737 | 6,448 | 464 | 7,112 |
| Not Stated | 18\% | 73 | 261 | 257 | 129 | 385 |
| Totals, Worcers | 38,394 | 17,786 | 56,190 | 51,415 | 22,284 | 34,158 |
| Non-workers |  |  |  |  |  |  |
| Wiven... |  | ${ }^{21,023}$ | 21.023 | 20.007 | 25,809 | 25,809 |
| Childrew | 15.480 $1.95!$ | 14.339 3.623 | 29.819 | 20,907 28 | 19,408 | 40.315 6.439 |
| Totals, Non-workers. . . . . . . . . . . . . . . . . . . . . . . |  |  |  |  |  |  |
|  | 17,431 | 38,985 | 56,416 | 23,232 | 49,271 | 72,564 |
| Totals, Immigrants......................... . | 55,835 | 56,781 | 112,606 | 74,707 | 72,051 | 146,758 |

Deportations.-Deportations by cause and nationality are shown in Table 11 for the years 1963-65. Persons who have not yet acquired domicile (five years of residence in Canada) may be deported if they fall into prohibited classes at time of entry or within five years of entry, if they have engaged in commercialized vice, have been convicted under the Criminal Code or have become inmates of prisons or mental institutions, or have gained entry by fraudulent means. The causes that may lead to deportation are narrowed after a person has acquired domicile. A person not a citizen may be deported regardless of length of residence if he is found to be a member of a subversive organization or engages in subversive activities, or if he has been convicted of an offence involving disloyalty to the Queen, or if he has, outside of Canada, engaged in activities detrimental to the security of Canada. A Canadian citizen cannot be deported.

## 11.-Deportations, ${ }^{1}$ by Cause and Nationality, 1963-65

Notr.-Figures from 1903 are given in the corresponding table of previous Year Books.

| Cause and Nationality | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: |
|  | No. | No. | No. |
| Cause |  |  |  |
| Mental and physical. | 29 | 32 | 39 |
| Public charges.. | 7 | 6 | 6 |
| Criminality . . . | 152 | $174{ }^{\text {r }}$ | 189 |
| Misrepresentation ${ }^{2}$ and stealth. | 251 | 347 | 502 |
| Other causes. | 108 | 163' | 105 |
| Totak, Depertations. | 547 | 722 | 841 |
| Nationallity |  |  |  |
| British. | 64 | 78 | 80 |
| United Stateg. | 185 | 194 | 222 |
| Other. | 298 | 452 | 588 |

[^75]
## Section 3.-Emigration Statistics

Emigration from Canada is an important factor tending to offset to some extent present and past immigration activities. The major outward movement has always, of course, been to the United States and that movement, both of native-born Canadians and of Europeans who originally migrated to Canada, has attained considerable proportions at certain periods. No Canadian statistics on emigration are available but Table 12 gives figures taken from the annual reports of the Immigration and Naturalization Service of the United States Department of Justice. These figures show the numbers of persons entering the United States from Canada during the years ended June 30, 1956-65 with the expressed intention of establishing permanent residence in that country. They do not include persons travelling for pleasure, even for extended periods of time, holders of border-crossing cards (normally issued to persons living in border areas of Canada but working in the United States) or casual tourist crossings in these same areas.

Of the 38,327 Canadian-born persons entering the United States in the year ended June 30,1965 with the intention of remaining permanently, 18,760 were males and 19,567 females. Slightly more than one quarter, or 10,595 , of the total native-born emigrants were males in the productive age group, 20-59 years. By occupation, the largest group of the total of 38,327 native-born persons was the professional or technical group which numbered 4,629 ; clerical and kindred workers numbered 3,979 , and 2,320 were classed as craftsmen or foremen. On the other hand, 20,539 persons, or 53.6 p.c. of the total, were classed as housewives, children and others with no reported occupation. Altogether, 40.9 p.c. of the total were persons under 20 years of age.

Of the 50,035 persons entering the United States from Canada claiming Canada as country of last permanent residence-which of course includes native-born persons and those born in other countries who have resided in Canada--the Immigration and Naturalization Service of the United States Department of Justice lists 6,579 as professional, technical and kindred workers, 5,200 as clerical and kindred workers and 4,039 as craftsmen, foremen and kindred workers. Housewives, children and others with no reported occupation accounted for 24,790 , or 49.5 p.c. of the total.

## 12.-Canadian-Born Persons Entering the United States from Canada and Elsewbere, and All Persons Entering the United States from Canada, Years Ended June 30, 1956-65

Nore,-Includes only persona who have declared their intention of remaining permanently in the United States Fhen applying for a visa (see text above). Soणrce: Immigration and Naturalization Service, United States Departiment of Jugtice.

| Year | Entering U.S. from Canada |  | $\begin{gathered} \text { Canadian- } \\ \text { Eorn } \\ \text { Entering U.S. } \\ \text { fom } \\ \text { Elsewhere } \end{gathered}$ | Year | Entering U.S. from Canada |  | CanadianBorn Entering U.S. from Elsewhere |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\underset{\text { Bora }}{\substack{\text { Canadian- } \\ \text { Bor }}}$ | $\begin{gathered} \mathrm{All} \\ \text { Pergons } \end{gathered}$ |  |  | Cansdian. Born | $\begin{aligned} & \text { All } \\ & \text { Persons } \end{aligned}$ |  |
|  | No. | No. | No. |  | No. | No. | No. |
| 1950... | $\cdots$ | 42, 263 | ** | 1961....... | 31,312 | 47,470 | 726 |
| 1957... | 32,354 | 46,354 | 849 | 1962........ | 29,569 | 44,272 | 808 |
| 1958... | 29,245 | 45,143 | 810 | 1963....... | 35,320 | 50,509 | 683 |
| 1959. | 22,325 | 34,599 | 757 | 1064,...... | 37.351 | 51,114 | 723 |
| 1960. | 30,312 | 46,668 | 678 | 1965....... | 37.519 | 50,035 | 808 |

## PART II.-GANADIAN CITIZENSHIP*

## Section 1.-The Canadian Citizenship Act

The Canadian Citizenship Act came into force on Jan. 1, 1947, its purpose being to give a clear definition of Canadian citizenship and provide an underiying community of status for all the people of Canada. The administration of Canadian citizenship was the responsibility of the Department of Citizenship and Immigration from 1950 to Oct. 1, 1966 when, as a result of the proclamation of the Government Organization Act (SC 1966, c. 25), it was transferred to the Department of the Secretary of State.

Naturalization procedures and events leading to the passing of the Canadian Citizenship Act are given in the 1951 Year Book, pp. 15:3-155. The provisions of the Act and its several amendments are outliped in some detail in the 1955 Year Book, pp. 177-181. More briefly, they are given in the following paragraphs.

Natural-Born Canadian Citizens, Born before Jan. 1, 1947.-The Act conferred natural-born status upon two categories of persons in being on Jan. 1, 19+7. These were (1) those born in Canada or on a Canadian ship or aircraft and who were not aliens on Jan. 1, 1947 ; and (2) those born of Canadian fathers outside of Canada who were not aliens on Jan. 1, 1947 and were either minors on that date or had already entered Canada for permavent residence.

The Act provides that a person born abroad who was a minor on Jan. 1, 1947 will automatically cease to be a Canadian citizen on his 24th birthday or on Jan. 1, 1954, whichever is the later date, unless he has bis place of domicile in Canada at such date or has, before such date and after reaching the age of 21 years, filed a declaration of retention of Canadian citizenship.

Natural-Born Canadian Citizens, Born after Dec. 31, 1946.-A person born outside of Canada subsequent to that date, whose responsible parent is considered a Canadian citizen pursuant to the terms of the Canadian Citizenship Act, is a Canadian if his birth is registered with the Registrar of Canadian Citizenship within two years of its occurrence or within such extended period as the Minister may authorize in special cases.

A person who becomes a natural-born Canadian citizen in such a manner will automatically cease to be a Canadian citizen if he fails to file a declaration of retention prior to his 24th birthday or does not have his place of domicile in Canada upon that date.

Canadian Citizens other than Natural-Born.-Before the 1953 amendments to the Citizenship Act, the only persons who acquired Canadian citizenship on Jan. 1, 1947 through the transitional clauses of Sect. 9 were persons who were naturalized in Canada before that date. British subjects who had Canadian domicile at the commencement of the Act and women lawfully admitted to Canada and married prior to Jan. 1, 1947 whose busbands would have qualified as Canadian citizens if the Act had come into force before the date of marriage. Sect. 9 was amended on June 1, 1953, so that a British subject who had his place of domicile in Canada for at least 20 years immediately before Jan. 1, 1947 need not comply with the requirements of Canadian domicile provided he was not under an order of deportation on Jan. 1, 1947.

Acquisition of Canadian Citizenship by Aliens and British Subjects.-The Act provides a means of acquiring Canadian citizenship. An alien who wishes to become a Canadian citizen must apply through his local court or through one of the special citizenship courts now established. He must appear before the judge for a hearing and will in due course be granted citizenship if his application is approved by the judge and by the Minister. A British subject may apply for citizenship directly to the Minister. It should be added that a minor child does not automatically acquire Canadian citizenship upon the grant of citizenship to the responsible parent.

[^76]Status of Married Women.-The Canadian Citizenship Act places no disabilities upon the married woman. She neither acquires nor does she lose Canadian citizenship by marriage. In order to acquire Canadian citizenship she must apply in exactly the same manner as does a man. There is, however, one advantage granted to her-if she is married to a Canadian citizen she may apply for citizenship after a residence of only one year in Canada.

The Canadian Citizenship Act also enables a woman married to an alien whose nationality she acquired upon marriage to divest herself of Canadian citizenship by the filing of a declaration of renunciation. Finally, it provides a means whereby a woman, who had become an alien through marriage prior to Jan. 1, 1947, may acquire the Canadian status she would otherwise have assumed on that date.

Status of Minor Children.-The minor child of a Canadian citizen other than a natural-born Canadian may receive a certificate of Canadian citizenship upon application therefor by his or her responsible parent, de facto guardian, or motber if she has custody of the child. Provision is also made in the Citizenship Act for the granting of a certificate of citizenship to a minor child in special circumstances.

Loss of Canadian Citizenship.-Canadian citizenship may be lost in the following manner:-
(1) A Canadian citizen who when outside of Canada and not under disability acquires by a voluntary and formal act other than marriage the nationality or citizenship of a country other than Canada. This does not apply if the country is at war with Canada at the time of acquisition but in such a case the Minister may order that he cease to be a Canadian citizen. The purpose of this is to hold the person, if deemed necessary, to his obligations as a Canadian.
(2) A natural-born Canadian citizen who is a dual uational by birth or through naturalization, and any Canadian citizen on marriage, may after attaining the age of 21 cease to be a Canadian citizen through the making of a declaration of renunciation thereof.
(3) A Canadian citizen who under the law of another country is a national or citizen of such country and who serves in the armed forees of sucb country when it is at war with Canada. This does not apply if the Canadian citizen became a national or citizen of such country when it was at war with Canada.
(4) An other-than-natural-born Canadian citizen, unless he served outside Canada in the Armed Forces of Canada in time of war or other related circumstances, or unless otherwise exempt, loses his citizenship automatically if he has resided outside of Canada for ten consecutive years. The period of absence may, however, be extended upon request if the application is filed and granted before loss occurs and if good and sufficient reason exists.

Loss of Citizenship by Revocation-Applicable Only to Naturalized Persons.-In 1958 the Canadian Citizenship Act was amended and limited the provisions regarding loss of Canadian citizenship to the following: the citizenship of a Canadian citizen other than a natural-born Canadian citizen may be revoked by the Governor in Council if, upon a report from the Minister, he is satisfied that such Canadian citizen, having been charged with the offence of treason under the Criminal Code or with an offence under the Official Secrets Act, has failed or refused to return to Canada voluntarily within such time as may be prescribed in a notice sent by the Minister to such person at his last known address and has not appeared at the preliminary inquiry into such offence or at the trial of such offence, or both as the case may be: or has obtained a certificate of naturalization or of Canadian citizenship by false representation or fraud or by concealment of material circumstances.

Doubt as to Loss of Cilizenship.-Where in the opinion of the Minister a doubt exists as to whether a person has ceased to be a Canadian citizen, the Minister may refer the question to the Commission referrel to in Subsection (4) of Section 19 for a ruling and the decision of the Commission or the Court, as the case may be, shail be final.

Loss of Citizenship by Revocation-Applicable to Both Natural-Born and Naturalized Persons.-The Governor in Council may in his discretion order that any person shall cease
to be a Canadian citizen if, upon a report from the Minister in charge of immigration, he is satistied that such person has, when not under a disability (1) acquired voluntarily, when in Canadia, the citizenship of a foreign country (other than by marriage), (2) taken or made an oath, affirmation, or other declaration of allegiance to a foreign country, or (3) made a declaration renouncing his Canadian citizenship.

## Section 2.-Canadian Citizenship Statistics

According to the 1961 Census, which required that each person state the country to which he owed allegiance and had citizenship rights as at June 1, 1961, less than 6 p.c. of Canada's population reported a country of citizenship other than Canada. Table I shows the citizenship of the population by province.

## 1.-Citizenship of the Population, by Province, Census 1961

| Province or Territory | Canadian | Other Commonwealth | United Stated | European Countries | Asiatic | Other | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No. |
| Newfoundland | 455,282 | 1,186 | 499 | 763 | 95 | 28 | 457.853 |
| Prince Edward island. | 103, 618 | 337 | 283 | 364 | 16 | 11 | 104,829 |
| Nova Scotia........... | 725,686 | 4,568 | 2.251 | 4,122 | 237 | 140 | 737,007 |
| New Brunswick........ | 590, 662 | 2,003 | 2,573 | 2,443 | 112 | 113 | 597,936 |
| Quebec. . | 5.078 .082 | 31,491 | 16,585 | 121.278 | 4,608 | 7. 167 | 5.259,211 |
| Ontario.. | 5.673, 098 | 181,429 | 36,329 | 317,216 | 7,309 | 17,711 | 6,236,092 |
| Manitobs. | 879,187 | 10,059 | 3.243 | 26,347 | 688 | 2,163 | 921, 686 |
| Saskstchewan | 902, 106 | 5,943 | 3,656 | 11,664 | 969 | 840 | 925,181 |
| Alberts. | 1,249,895 | 21,353 | 11,674 | 53,129 | 1,982 | 2,911 | 1,331,944 |
| British Columbis. | 1,498,498 | 44,647 | 10,908 | 64,641 | 6,973 | 8.415 | 1,629,082 |
| Tertitories........... | 35,315 | 671 | 309 | 1,228 | 44 | 59 | 37,626 |
| Canad | 17,182,4\%9 | 306,680 | 88,812 | 603,195 | 23,038 | 34,588 | 18,238,247 |

Citizenship Certificates Issued and Granted.-Citizenship certificates "issued", as shown in Table 2, include both certificates granted to new citizens and those issued for various reasons to persons who were already Canadian citizens; certificates "granted" means that the holders became Canadian citizens by the grant of such certificates.

## 2.-Citizenship Certificates Issued and Granted, by Status of Recipient, 1964 and 1965



[^77]Characteristics of Persons Granted Citizenship Certificates in 1965.-Comparable detailed statistics showing the characteristics of persons granted citizenship certificates are available since 1953; such characteristics include age, marital status, occupation, period of immigration, residence and previous nationality. The number of applicants fluctuates from year to year but it is known that about 40 p.c. of the immigrants who entered Canada during the past ten years who are eligible for Canadian citizenship have become Canadians.

Of the 63,844 persons granted citizenship in 1965, fewer than 1 p.c. had immigrated to Canada before 1921, 2 p.c. in the period 1921-40, 7 p.c. in the period 1941-50 and 91 p.c. after 1950. Regionally, these new citizens were distributed as follows: 2 p.c. in the Atlantic Provinces, 18 p.c. in Quebec, 54 p.c. in Ontario, 14 p.c. in the Prairie Provinces and 12 p.c. in British Columbia. Almost 87 p.c. of them resided in urban cestres.

About 18 p.c. of the persons naturalized in 1965 previously owed allegiance to a British Commonwealth country, 17 p.c. were former citizens of Italy, 13 p.c. of Germany, 9 p.c. of the Netherlands, 5 p.c. of Hungary, 5 p.c. of Greece and 5 p.c. of Yugoslavia. Most of the persons designated as "stateless" were born in Poland, the U.S.S.R., Yugoslavia, Hungary, Germany, Czechoslovakia and Romania.

Among the males in the labour force naturalized in 1965, craftsmen, production process and related workers occupations were reported by 44 p.c., 12 p.c. were in service and recreation occupations, 12 p.c. were in professional and technical occupations, labourers sccounted for 8 p.c., managerial occupations for 6 p.c., clerical workers for 4 p.c. and farmers and farm workers for 4 p.c. each. Of the females, 46 p.c. were homemakers and, among those employed outside the home, 31 p.c. were in the craftsmen, production process and related workers occupations group, 26 p.c. were in service and recreation occupations and 24 p.c. were in elerical occupations.
3.-Persons Granted Citizenship Certificates in 1544 and 1965, by Province of Residence, and Period of Immigration to Canada


[^78]
## 3.-Persons Granted Citizenship Certificates in 1964 and 1965, by Province of Residence, and Period of Immigration to Canada-concluded

| Year and Residence | Period of Immigration |  |  |  |  |  | Born in Canada ${ }^{1}$ | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Before } \\ & 1921 \end{aligned}$ | $\begin{aligned} & 1921- \\ & 1930 \end{aligned}$ | $\begin{aligned} & 1931- \\ & 1940 \end{aligned}$ | $\begin{aligned} & 1941- \\ & 1950 \end{aligned}$ | $\begin{aligned} & 1951- \\ & 1960 \end{aligned}$ | $\begin{aligned} & 1961- \\ & 1965 \end{aligned}$ |  |  |
| 1965 | No. | No. | No. | No. | No. | No. | No. | No. |
| Residing in Canada. | 446 | 750 | 283 | 4,162 | 55,168 | 2,763 | 126 | 63,698 |
| Newfoundland. <br> Prince Edward Island | - | - | 1 | ${ }_{6}^{9}$ | 66 39 | 7 | 1 | 83 |
| Nova Scotia. ................... | 6 | 7 | 1 | 43 | 309 | 19 | 1 | -585 |
| New Brunswick | 3 | 1 | 1 | 23 | 216 | 26 | 1 | 270 |
| Quebec... | 61 | 107 | 38 | 434 | 10,347 | 504 | 18 | 11.509 |
| Ontario. ........................ | 86 | 275 | 105 | 2,283 | 30,522 | 1,493 | 37 | 34,801 |
| Manitoba. ...................... | 36 | 63 | 26 | 198 | 2,241 | 98 | 9 | 2,671 |
| Saskutchewan | 63 | 78 | 23 | ${ }^{93}$ | -637 | 50 | 16 | ${ }^{2} 960$ |
| Alberta....................... | 73 117 | 111 | 47 | 453 613 | 4,333 6,211 | 196 360 | 20 23 | 5,233 <br> 7 |
| British Columbia................. | 117 | 105 3 | 41 1 | 613 7 | 6,211 147 | 360 2 | 23 | 7,470 161 |
| Residing Outside Canada....... | 1 | - | 3 | 12 | 92 | 25 | 13 | 146 |
| Totals, Naturalized...... | 447 | 750 | 286 | 4,174 | 55,260 | 2,788 | 139 | 63,844 |

${ }^{1}$ Canadian-born persons who lost their citizenship by marriage; this applies to females only.

## 4.-Persons Granted Citizenship Certificates in 1964 and 1965, by Age Group, Occupation and Sex



[^79]
## 5.-Persons Granted Ctitzenship Certificates in 1964 and 1965, by Country of Birth

| Country of Birth | 1964 | 1965 | Country of Birth | 1984 | 1985 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. | No. |
| Algeria. | 39 | 50 | Moroce0.......................... | 206 | 122 |
| Argentina........................ | 95 | 74 | Netherlands..................... | 5,951 | 5,809 |
| Australis......................... | 108 | 104 | Norway. | 228 | 185 |
| Anstrin. | 1,143 | 977 | Poland. . | 3.692 | 3.795 |
| Belgium. . . . . . . . . . . . . . . . . . . . | 849 | 737 | Portugal. . . . . . . . . . . . . . . . . . . . . . | 1,195 | 1,464 |
| Britain.......................... | 8,149 | 8,429 | Romanis. . . . . . . . . . . . . . . . . . . | 593 | 746 |
| British Guiama (now Guyana).... | 128 | 130 | South Africa..................... | 181 | 174 |
| Canada.......................... | 347 | 274 | Spain............................ | 210 | 215 |
| Chins............................ | 1,920 | 1,914 | Sweden., ......................... | 138 | 138 |
| Czeohoelovakia. | 480 | 433 | Switzerland. | 309 | 337 |
| Denmark. | 990 | 804 | Turkey . . . . . . . . . . . . . . . . . . . | 198 | 180 |
| Esypt............................ | 227 | 167 | Union of SovietSocialist Republics ${ }^{\text {a }}$ | 2,069 | 1,059 |
| Finland......................... | 661 | 718 | United States.................... | 783 | 878 |
| Fratce., | 852 | 851 | West Indies. | 612 | 722 |
| Germany. ....................... | 7,647 | 7,139 | Yugoslavia. . . . . . . . . . . . . . . . . . | 3,324 | 3,359 |
| Greece........................... | 3,216 | 3,339 | Other. . | 898 | 873 |
| Hong Kong....................... | 179 | 281 |  |  |  |
| Hungary.......................... | 4,455 | 3,632 | Tetals, All Countries. | 64,334 | 63,844 |
| India............................ | 473 | 609 | Totak, Al Countries. |  |  |
| Indonesia. . . . . . . . . . . . . . . . . . . . | 127 | 99 |  |  |  |
| Ireland, Republic of............... | 543 | 548 | Commonwealth.................. | 10,679 | 11,254 |
| Israel.............................. | 301 | 355 | Otber Asis. . . . . . . . . . . . . . . . . . . | 3,033 | 3,150 |
| 1taly........................... | 10,259 | 10,453 | Other Europe. . . . . . . . . . . . . . . . . | 48,880 | 47,719 |
| Japan. | 72 | 95 | Soutb America................... | 293 | 337 |
| Lebanon. . . . . . . . . . . . . . . . . . . . | 281 | 332 | United States. | 783 | 878 |
| Malts............................. | 226 | 235 | Other........................... | 660 | 506 |

${ }^{1}$ Includes Baltic countries.

## 6.-Rersons Granted Citizenship Certificates in 1964 and 1985, by Country of Former Alleglanee

| Country of Former Allegiance | 1964 | 1965 | Comntry of Former Allegiance | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. | No. |
| Commonwealth countries. | 11,405 | 12,069 | Lebanon, | 310 | 354 |
| Austria. | 1,059 | 926 | Lithuania. | 180 | 135 |
| Belgiom. | 779 | 656 | Netherlands. | 6,146 | 5,960 |
| Bulsaria. | 28 | 29 | Norway, | 246 | 184 |
| China. | 1,922 | 1,886 | Poland. | 3,229 | 3,212 |
| Czechoalovakia. | 248 | 235 | Portugal. | 1,196 | 1,466 |
| Denmark. | 1,021 | 815 | Romania. | 235 | 271 |
| Estonia. | 214 | 198 | Spain............................ | 211 | 214 |
| Finland. | 658 | 723 | Sweden. | 126 | 123 |
| France. | 957 | 925 | Switzerland. | 315 | 833 |
| Germany. | 8.566 | 8,054 | Turkey.. | 155 | 141 |
| Greece. | 8.275 | 3,334 | Union of Soviet Socialist Republics | 1,085 | 1,082 |
| Hungary. | 4,332 | 3,456 | United States.................... | 995 | 1,056 |
| Irrael. | 948 | 1,331 | Yugoelavia | 3,125 | 3,167 |
| Italy, | 10,333 | 10,549 | Other. | 679 | 579 |
| Japan.. | 76 | 98 |  |  |  |
| Latvia. | 251 | 199 | Totals, All Countries. . . . . . | 64,334 | 6,344 |



The Canadian population, although basically made up of British Isles and French ethnic groups, is a mosaic of people whose forbears or who themselves have come from many lands. More than 42 p.c. of them are under 20 years of age.

## CHAPTER V.-VITAL STATISTICS*

## CONSPECTUS

Page PageSection 1. Sunmary of Vital Statistics. ..... 235
Segion 5. Marriageb and Divorces. ..... 267
Section 2. Bibthe. ..... 241
Section 3. Deathe ..... 251
Subsection 1. General Mortality ..... 251
Subsection 2. Infant Mortality. ..... 259
Subsection 3. Maternal Mortality ..... 263
Section 4. Nattral Increabe, ..... 265
Subsection 1. Marriages. ..... 267
Subsection 2. Divorces. ..... 271
Section 6. Canadian Life Tableq ..... 271
Sicction 7. International Comparibons of
Vital Statietice ..... 275

The interpretation of the symbols used in the tables throughout the Year Book will be found on $p$. virii of this volume.

Vital statistics provide a key to the interpretation of population developmenta measure of the pace at which it is growing, the rate at which women are marrying and reproducing, and the effect this has on the age and sex distribution of the population, as well as the relative importance of the diseases that cause death each year. Vital statistica constitute the record of births, deaths, marriages and divorces registered in the provinces and territories of Canada. The continuity of such data gives a constant guide to the planning, operation and evaluation of many national activities, particularly in the fields of public health, education, community planning and various types of business enterprise.

This Chapter gives a fairly detailed coverage of the vital statistics information available, gives life tables for males and females and presents a comparison of the principal Canadian vital statistics rates with those of other countries. In making international and interprovincial comparisons of birth, death and marriage rates, it is important to note that part of the differences observed over a period of years as between countries, provinces or local areas may be caused by differences in the sex and age distribution of the populations involved. Similarly, rates for any one area may be affected by changes in such distribution. The population data upon which vital statistics rates are computed are given in Chapter III of this volume. Births and deaths are classified by place of residence (births according to the residence of the mother) and marriages by place of occurrence.

The history of the collection of vital statistics in Canada is covered in the 1948-49 Year Book, pp. 185-188. Detailed information is given in Vital Statistics (Preliminary Report) (Catalogue No. 84-201), Vital Statistics of Canada (Catalogue No. 84-202) and in other regular and special reports; in addition, certain umpublished data are available on request.

## Section 1.-Summary of Vital Statistics

Table 1 gives a summary for reference purposes of the principal vital statistics of the provinces and territories of Canada for five-year periods 1941-60 and for single years 196264. Table 2 shows similar data for urban centres having at least 20,000 population at the date of the 1961 Census for the year 1964 with comparative averages for 1956-60.

[^80]


## 2.-Summary of Pifincipal Vital Statisties for Incorporated Urban Centres of 20,000 Population or Over, ${ }^{1}$ 1st 4 with Average for 1956-6需

Norr.-Birth, death and natural increase rates cannot be computed for 1964 or the period 1056-60 aince urban centre populations are not known for intercensal periods. rban centrea are designated in this table by the following abbrevistiong: c. $=$ city, $t .=$ town, vl. = vilage and d.m. = dietrict municipality

| Province and Urban Centre | Live Births |  | Deaths |  | Natural Increase ${ }^{2}$ |  | Infant Mortality ${ }^{\text {d }}$ |  |  | Neonatal Mortality ${ }^{4}$ |  |  | Marriages ${ }^{5}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\underset{195 B_{-6}}{A V_{0}}$ | 1984 | ${ }_{1956-60}$ | 1064 | $\underset{1956-60}{A v}$ | 1904 | $\underset{1956-60}{A v}$ |  |  | $\begin{gathered} \text { Av. } \\ 1956-60 \end{gathered}$ |  |  | ${ }_{1956-60}$ | 1964 |
|  | No. | No. | No. | No. | No. | No. | Rate ${ }^{\text {s }}$ | No. | Rate ${ }^{\text {d }}$ | Rste ${ }^{\text {b }}$ | No. | Rate ${ }^{\text {d }}$ | No. | No. |
| Newfoundiand- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Corner Brook, c. | 940 | 784 | 127 | 118 | 818 | 666 | 36.4 | 26 | 33.2 | 21.5 | 18 | 23.0 | 210 | 235 |
| St. John's, e.. | 2.010 | 2,188 | 521 | 569 | 1.489 | 1,618 | 28.2 | 47 | 21.5 | 21.8 | 31 | 14.2 | 689 | 723 |
| Prince Edward IskindCharlottetown, c. ${ }^{2}$...... | 456 | 384 | 210 | 229 | 246 | 155 | 36.0 | 15 | 39.1 | 24.6 | 10 | 26.0 | 172 | 152 |
| Nowa Scotia- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Dartmouth, 0 | 881 | 1,719 | 136 | 248 | 745 | 1,471 | 24.1 | 36 | 20.9 | 16.3 | 27 | 15.7 | 177 | 280 |
| Glace Bay, | 623 | 598 | 219 | 217 | 404 | 381 | 44.3 | 20 | 33.4 | 26.0 | 11 | 18.4 | 181 | 178 |
| Halifax, 0. | 2,441 | 1,976 | 762 | 735 | 1,679 | 1,241 | 27.6 | 49 | 24.8 | 17.0 | 40 | 20.2 | 1.112 | 1.083 |
| Sydney, c. | 950 | 818 | 259 | 282 | 691 | , 336 | 13.7 | 19 | 23.2 | 8.4 | 12 | 14.7 | 275 | 281 |
| New Brunswicle- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Monetor, c... | 1,050 | 1,008 | 274 | 313 | 776 | 695 | 22.5 | 16 | 15.8 | 14.5 | 12 | 11.9 | 348 | 406 |
| Saint John, c | 1,499 | 1,462 | 589 | 563 | 910 | 899 | 27.0 | 31 | 21.2 | 17.9 | 23 | 15.7 | 532 | 502 |
| Quebee- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Cap de la Madeleine, e. | 723 | 618 | 152 | 161 | 571 | 457 | 32.4 | 12 | 19.4 | 22.1 | 10 | 16.2 | 204 | 209 |
| Chicontími, e......... | 1.004 | 794 | 188 | 190 | 816 | 604 | 46.4 | 33 | 41.6 | 29.7 | 23 | 29.0 | 223 | 237 |
| Chomedey, c...+ | 752 | 1,108 | ${ }^{96}$ | 155 | 656 | 953 | 23.0 | 19 | 17.1 | 15.6 | 14 | 12.8 | 82 | 166 |
| Drummondville, c. | 746 | - 687 | 187 | 227 | 559 | 460 | 43.2 | 54 | 78.6 | 25.5 | 24 | 34.9 | 242 | 283 |
| Granby, c. | -877 | 815 | 180 | 228 | 697 | 687 | 27.8 | 30 | 32.8 | 18.7 | 22 | 24.0 | 253 | 272 |
| Hull, e. . ..... | 1,742 | 1,644 | 385 | 429 | 1,357 | 1,215 | 39.2 | 55 | 33.5 | 2 H .2 | 39 | 23.7 | 429 | 451 |
| Jacques Cartier, | 1.233 | 1,309 | 202 | 226 | 1,031 | 1,088 | 36.0 | 27 | 20.6 | 21.4 | 18 | 13.8 | 193 | 253 |
| Jonquière, c...... | - 992 | - 714 | 138 | 153 | ${ }^{1} 854$ | ${ }^{+} 561$ | 34.9 | 21 | 29.4 | 20.8 | 12 | 16.8 | 201 | 206 |
| Lachine, c... | 886 | -834 | 274 | 299 | 612 | 535 | 21.7 | 22 | 28.4 | 12.9 | 17 | 20.4 | 264 | 283 |
| LaSalle, c. | 858 | 1,182 | 155 | 203 | 703 | 979 | 18.2 | 28 | 23.7 | 12.4 | 20 | 16.9 | 95 | 129 |
| Longueuil, c. | 682 | 1. 619 | 136 | 219 | 546 | 400 | 22.9 | 14 | 22.6 | 15.8 | 12 | 19.4 | 171 | 10.95 |
| Montreal, c... | 29.478 | 26.031 | 10,241 | 9.931 | 19,237 | 16, 100 | 28.1 | 595 | 22.3 | 19.4 | 444 | 17.1 | 11, 163 | 10,527 |
| Montreal North, c | 1,128 | 1,514 | - 192 | 359 | - 936 | 1,155 | 28.0 | 44 | 29.1 | 19.0 | 32 | 2 t .1 | 182 | 222 |
| Mount Royal, $\mathrm{t}_{\text {t. }}$ | - 276 | 245 | 96 | 114 | 180 | ${ }^{1} 131$ | 21.0 | 3 | 12.2 | 14.5 | 1 | 4.1 | 160 | 181 |
| Outremont, e... | 337 | 343 | 294 | 250 | 43 | 93 | 24.9 | 8 | 23.3 | 17.8 | 6 | 17.5 | 273 | 183 |
| Pointe aux Trembles, c. | 510 | 630 | 120 | 209 | 390 | 421 | 35.7 1 | 11 | 17.5 | 21.2 | 9 | 14.3 | 82 | 120 |



|  |
| :---: |
|  |  |
|  |  |





|  <br>  |  <br>  |
| :---: | :---: |
|  <br>  |  <br>  |
|  |  |


|  が |  <br>  |
| :---: | :---: |
|  |  <br>  |
|  ผN | चツ |
| ManNT్య： |  <br>  |
|  |  |
| ㅇ్రిగ్రT： がーシ |  |





| Province and Urban Centre | Live Births |  | Deaths |  | Natural Increase ${ }^{2}$ |  | Infant Mortality ${ }^{\text {a }}$ |  |  | Neonatal Mortality ${ }^{\text {c }}$ |  |  | Marriages ${ }^{\text {S }}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\stackrel{\text { Av. }}{1956-60}$ | 1964 | $\begin{gathered} \text { AV. } \\ \text { 1956- } 60 \end{gathered}$ | 1964 | $\begin{gathered} A v \\ 1956-60 \end{gathered}$ | 1964 | $\begin{gathered} \text { Av. } \\ 1956-60 \end{gathered}$ |  |  | $\begin{gathered} \text { Av. } \\ 1956-60 \end{gathered}$ |  |  | $\begin{gathered} A v \\ 1956-60 \end{gathered}$ | t964 |
|  | No. | No. | No. | No. | No. | No. | Rate | No. | Rate ${ }^{\text {d }}$ | Rate ${ }^{\text {d }}$ | No. | Rate ${ }^{\text {c }}$ | No. | No. |
| Manitobs- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Brandon, c. | 880 | 639 | 228 | 307 | 452 | 332 | 22.1 | 12 | 18.8 | 16.8 | 9 | 14.1 | 248 | 235 |
| Kildonan East, c. | 600 | 537 | 126 | 160 | 474 | 367 | 21.3 | 8 | 15.2 | 16.7 | 8 | 15.2 | 106 | 175 |
| Kildonan West, c. | 386 | 328 | 99 | 134 | 287 | 194 | 13.0 | 6 | 18.3 | 10.4 | 4 | 12.2 | 50 | 90 |
| St. Boniface, c.... | 962 | 1,026 | 305 | 301 | 657 | 725 | 23.3 | 15 | 14.6 | 16.6 | 12 | 11.7 | 280 | 326 |
| St. Jsmes, c. | 715 | 601 | 210 | 231 | 505 | 370 | 21.7 | 9 | 15.0 | 16.4 | 7 | 11.6 | 214 | 217 |
| St. Vital, c. | ${ }_{6} 618$ | 651 | 156 | 173 | . 462 | 478 | 23.1 | 14 | 21.5 | 16.2 | 10 | 15.4 | 110 | . 138 |
| Winnipeg, $0 .$. | 6,169 | 5,588 | 2,633 | 2,644 | 3,536 | 2,944 | 26.2 | 130 | 23.3 | 19.5 | 98 | 17.5 | 2,847 | 2.589 |
| Baskatchewan- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Moose Jaw, c.. | 909 | 757 | 323 | 333 | 586 | 424 | 20.7 | 17 | 22.5 | 15.8 | 11 | 34.5 | ${ }_{273}^{296}$ | 294 250 |
| Prince Albert, 0. | 642 2.922 | 699 3.329 | 173 | 167 | 469 2.241 | + 832 | 29.6 | 15 | 21.5 | 20.6 | 13 63 | 18.6 | 1,004 | 1.062 |
| Saskatoon, C . | 2,504 | 2,684 | 650 | 760 | 1,854 | 1,924 | 20.8 | 59 | 22.0 | 16.2 | 45 | 16.8 | '876 | 1.963 |
| Alberta- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Calgary, e. | 6,937 | 7.651 | 1,569 | 2,088 | 5,368 | 5,563 | 22,4 | 178 | 28.3 | 16.4 | 133 | 17.4 | 2,205 | 2,470 |
| Edmanton, c.. | 8,807 | 8,397 | 1,670 | 1,884 | 7, 137 | 6,513 | 22.3 | 178 | 21.2 | 16.3 | 121 | 14.4 | 3,136 | 3,136 |
| Jasper Place, $t$. | 899 | 1,147 | 77 | 142 | 822 | 1,005 | 17.6 | 22 | 19.2 | 12.5 | 18 | 15.7 | 21 | 49 367 |
| Lethbridge, c.. | 897 | 768 | 249 | 287 | 648 | +481 | 21.9 | 19 | 24.7 | 18.3 | 14 | 18.2 | 382 | 367 |
| Medicine Hat, c. | 586 | 541 | 211 | 256 | 375 | 286 | 22.9 | 9 | 18.6 | 14.7 | 7 | 12.8 | 271 | 265 |
| BritishColumbte- |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Burnaby, d.m..... | 2,477 | 1,974 | 719 | 821 | 1,758 | 1,153 | 20.1 | 47 | 23.8 | 14.4 | 35 | 17.7 | 498 | 552 |
| Coquitlam, d,m.... | 642 | 742 | 110 | 168 | 1, 532 | 1. 574 | 19.6 | 12 | 16.2 | 14.0 | 10 | 13.5 | 59 | 120 |
| New Westminster, c. | 649 | 549 | 326 | 374 | 314 | 175 | 17.8 | 13 | 23.7 | 12.6 | 10 | 18.2 | 551 | 547 148 |
| North Vancouver, c.. | 626 | 541 | 195 | 237 | 431 | 304 | 20.4 | 9 | 16.6 | 14.0 | 7 | 12.9 | 160 | 148 |
| North Vancouver, d.m. | 920 | 864 | 188 | 240 | 732 | 824 | 17.0 | 12 | 13.9 | 10.4 | 8 | 9.3 | 94 | 166 |
| Richmond, d.m....... | 1,055 | 1,013 | 178 | 262 | 877 | 751 | 18.4 | 21 | 20.7 | 12.5 | 15 | 14.8 | 116 | 185 |
| Saanich, d,m.... | 1,026 | 1,013 | 384 | 434 | 642 1 | +579 | 18.5 | 17 | 16.8 | 13.6 | 12 | 11.8 | 130 | 222 |
| Surrey, d.m. | 1,709 | 1,665 | 455 | 599 | 1.254 | 1.066 | 18.4 | 27 | 16.2 | 13.0 | 18 | 10.8 | 209 | ${ }^{276}$ |
| Vancouver, | 8,211 | 6,408 | 4, 380 | 4,921 | 3,631 | 1,487 | 21.0 | 110 | 17.2 | 15.1 | 85 | 13.3 | 4,568 | 3,825 |
| Victoria, 0............. | 1,236 | ${ }^{933}$ | 852 | 945 | 384 | -12 | 23.8 | 24 | 25.7 | 16.2 | 20 | 21.4 | ${ }^{698}$ | 6998 |
| West Vancouver, d.m.............. | 404 | 386 | 183 | 212 | 221 | 174 | 22.8 | 3 | 7.8 | 16.3 | 2 | 8.2 | 121 | 204 |

[^81]

## Section 2.-Births*

No accurate figures on Canadian crude $\dagger$ birth rates are available prior to 1921, when the annual collection of official national figures was initiated. However, the following rough estimates of the average annual crude rates for each ten-year intercensal period between 1851 and 1921 may be inferred from studies of early Canadian census data:-
$\left.\begin{array}{cc}\text { Intercensal } \\ \text { Period }\end{array} \quad \begin{array}{c}\text { Estimated } \\ \text { Average } \\ \text { Anual Crude } \\ \text { Birth Rate } \\ \text { (per 1,000 } \\ \text { Population) }\end{array}\right\}$

| $1891-1901 \ldots \ldots \ldots \ldots \ldots . .$. | 30 |
| :--- | :--- |
| $1901-11 \ldots \ldots \ldots \ldots \ldots \ldots .$. | 31 |
| $1911-21 \ldots \ldots \ldots \ldots \ldots$ |  |

Unless otherwise indicated, "births" in this Section refer to infants born alive; stillbirths are dealt with under a separate heading on p. 249 and under multiple births on p. 244. For international comparisons, see Section 7 , pp. 275-276.
$\dagger$ A crude rate is one based on the total population.

The general trend in the national birth rate since 1925 is shown in the chart on $\mathbf{p} .241$ and since 1941 in Table 1. The annual rates declined gradually but steadily from 29.3 in 1921 to a record low of 20.1 in 1937, recovered sharply in the late 1930's and during World War II to 24.3 in 1945, and in the two years following the War rose to a postwar high of 28.9 in 1947. Between 1948 and 1959 the rate remained remarkably stable at between 27.1 and 28.5 but has since been declining and in 1964 reached a postwar low of 23.5. Part of this decline is attributable to the fact that the crude birth rate is based on total population, which now includes larger proportions of 'non-productive' population, as well as to the fact that the large, immediate postwar cohorts of married women are now approaching the end of their reproductive periods and have completed their families. Further, even if the annual number of births were to remain stable at 450,000 to 500,000 -as it has for the past five to ten years-the net effect of an increase in population is a declining crude birth rate.

The rates in most provinces followed trends very similar to the national trend but showed some regional differences in recent years. Although all provinces had record high rates immediately following World War II, average birth rates in Ontario and the western provinces were higher during the 1951-55 period than during 1946-50 and those for Quebec and the Maritimes were lower than during 1946-50. In fact, Ontario, Alberta and British Columbia had record high crude birth rates during the $1956-59$ period. However, most of the provinces recorded their lowest postwar rate in 1964.

It is often erroneously assumed that the Province of Quebec has not only the largest number of births annually but the highest birth rate in Canada. Since the late 1930s or early 1940s Newfoundland, in some years New Brunswick and, since 1953, Alberta have had higher birth rates than Quebec. Table 1, pp. 236-237, shows that six provincesNewfoundland, Prince Edward Island, Alberta, New Brunswick, Saskatchewan and Nova Scotia, in that order, had higher crude rates than Quebec in 1964, followed by Ontario, Manitoba and British Columbia. However, since these crude rates are based on the total population they do not reflect the fertility of the women of reproductive ages in the different provinces or the number married within these reproductive ages. A more accurate measure of the true birth rate is one based on the number of married women between the ages of 15 and 45 (see pp. 245-246).

Also contrary to popular impression, since 1953 more babies were born each year in Ontario than in the Province of Quebec; in 1964, 152,729 babies were born to Ontario mothers as compared with 130,845 to Quebec mothers. Altogether, 452,915 children were born alive in Canada in 1964, 26,360 fewer than the record 479,275 born in 1959 and 12,852 fewer than the number born during 1963.

Sex of Live Births.- With rare exceptions, wherever birth statistics have been collected they have shown an excess of male over female births. No conclusive explanation of this excess has yet been given. Nevertheless it is so much an accepted statistical fact that a proper ratio of male to female births has become one of the criteria of complete registration. The number of males to every 1,000 females born in Canada has averaged around 1,057 since the middle 1930s. Provincial sex ratios vary much more widely because of the relatively amall number of births involved-the smaller the total number of births, the greater the chance of wide sex-ratio variations from year to year. Another commonly acknowledged fact in many countries-although there is no generally accepted explanation for it-is that the male ratio appears to rise during or shortly after major wars. This seems to have happened in Canada between 1942 and 1945 when the ratio rose to an average of 1,064 during these four years as compared with averages of 1,054 between 1931-41 and 1,057 since 1946. In $1964,1,056$ male infants were born for every 1,000 females.

## 3.-Sex Ratios of Live Births, 1941-84

Nore.-Figures for Newfoundiand are included from 1949 and those for the Yukon and Northwest Territories from 1950.

| Year | Males | Females | $\begin{gathered} \text { Males } \\ \text { to } 1,000 \\ \text { Females } \end{gathered}$ | Year | Males | Females | $\begin{aligned} & \text { Males } \\ & \text { to 1,000 } \\ & \text { Females } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. |  | No. | No. | No. |
| 1941. | 131,175 | 124,142 | 1.057 | 1958............. | 241,675 | 228,443 | 1,058 |
| 1951. | 195,918 | 185, 174 | 1,058 | 1959............ | 246,073 | 233,202 | 1,055 |
| 1952 | 208,070 | 195,489 | 1,064 | 1960 | 246,029 | 232,522 | 1,058 |
| 1953. | 214,423 | 203,461 | 1,054 | 1961 | 244, 403 | 231,297 | 1,057 |
| 1054. | 22, 168 | 212,030 | 1,057 |  |  |  |  |
| 1955. | 227,382 | 215,555 | 1.055 | 1902............. | 240,870 | 228,823 | 1,053 |
| 1958. | 231,697 | 219,042 | 1,058 | 1963............. | 238,865 | 226,902 | 1.053 |
| 1957. | 241.073 | 228,020 | 1.057 | 1984.............. | 232,857 | 220.258 | 1.056 |

Hospitalized Births.-In 1964 over 98 p.c. of all Canadian births occurred in hospital as compared with 88 p.c. eight years previously. Table 4 shows the rise in hospitalized births in each province since 1941. Before the initiation in 1958 of the federal-provincial hospital insurance programs-in which all provinces were participating by 1961 -there were rather wide variations among the provinces in percentages of hospitalized births. Such variations were caused by the existence of prepaid or provincially sponsored hospital, maternity or medical care plans in some provinces, the unavailability of hospital facilities in others-particularly in remote rural areas-and preference for home delivery in some local areas. Although some variation still exists, the operation of the hospital insurance program has probably been responsible for the noticeable increases in hospitalized births in provinces that previously had lower proportions, for example in New Brunswick where the hospital insurance plan was put into effect on July 1, 1959, and in Quebec where the plan went into effect in 1961.
4.-Percentages of Live Births Hospitalized, by Province, 1941-44

| Year | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Cansda |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | p.e. | p.e. | p.e. | p.c. | p.c. | p.e. | p.e. | p.c. | p.c. | p.o. | p.c. | p.c. |
| 1941.... | 32.7 | 50.4 | 30.8 | 17.6 | 67.5 | 73.6 | 83.2 | 77.1 | 87.3 | .. | - | 48.9 |
| 1951. | 88.3 | 87.2 | 70.7 | 53.0 | 93.1 | 93.1 | 35.2 | 93.6 | 97.3 | 87.4 | 32.8 | 79.1 |
| 1956. | 85.2 | 93.9 | 84.7 | 71.2 | 97.3 | 95.8 | 97.6 | 98.6 | 98.3 | 87.7 | 44.6 | 88.4 |
| 1957. | 96.7 | 95.1 | 86.8 | 75.6 | 87.9 | 96.4 | 98.3 | 97.5 | 98.5 | 91.3 | 38.6 | 90.2 |
| 1958.... | 99.0 | 96.2 | 88.5 | 79.3 | 98.0 | 96.8 | 98.5 | 97.7 | 98.5 | 92.6 | 42.1 | 91.7 |
| 1959. | 99.2 | 98.0 | 93.5 | 82.3 | 98.6 | 97.4 | 98.5 | 88.0 | 88.6 | 88.6 | 45.7 | 93.1 |
| 1960.. | 99.4 | 98.6 | 97.7 | 85.2 | \$9.0 | 88.0 | 99.0 | 98.5 | 98.8 | 93.3 | 51.7 | 94.6 |
| 1961. | 99.3 | 98.9 | 99.0 | 92.3 | 99.3 | 98.2 | 98.8 | 98.6 | 98.9 | 92.8 | 57.1 | 96.9 |
| 1962. | 99.6 | 99.2 | 99.4 | 95.0 | 99.4 | 98.5 | 98.8 | 98.7 | 98.9 | 95.4 | 65.9 | 97.8 |
| 1063. | 99.8 | 99.3 | 99.4 | 96.5 | 99.6 | 98.2 | 99.1 | 98.9 | 09.1 | 93.0 | 64.3 | 98.3 |
| 1964. | 99.5 | 99.4 | 99.7 | 97.6 | 99.6 | 98.7 | 98.9 | 90.0 | 89.0 | 94.4 | 61.3 | 98.7 |

[^82]Births in Urban Centres.-Table 2, pp. 238-240, shows the number of births in 1964, as compared with the average for 1956-60, to mothers residing in each urban centre of 20,000 population or over. Because the populations of urban centres are not known for intercensal years, birth rates cannot be computed for the 1956-60 period or for 1962-64.

Illegitimacy.*-In 1964, nearly 6 p.c. of the live births in Canada were illegitimate. This percentage is low compared with that of many countries of the world but has been rising recently, as shown in Table 5.
5.-Illegitimate Live Births and Percentages of Total Live Births, by Province, 1941-64

| Year | Nfid. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Canadal |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Illegitimate Live Births |  |  |  |  |  |  |  |  |  |  |  |  |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| Av. 1941-45 | 406 | 107 | 1,074 | 591 | 3,003 | 3,751 | 597 | 673 | 852 | 889 | . | . | 11,536 |
| " 1946-50 | 441 | 152 | 1,244 | 754 | 3,382 | 4,256 | 766 | 914 | 1,202 | 1,516 |  |  | 14,375 |
| " 1951-55 | 426 | 139 | 1.082 | 659 | 4,086 | 4,065 | ${ }^{969}$ | 1,044 | 1,481 | 1,898 | 53 | 50 | 15,951 |
| " 1956-60 | 587 | 139 | 1,201 | 587 | 4,675 | 4,891 | 1,166 | 1,194 | 1,941 | 2,505 | 72 | 102 | 19,160 |
| 1962. | 625 | 133 | 1,394 | 739 | 5,195 | 5,813 | 1.558 | 1,384 | 2,572 | 2,804 | 91 | 135 | 22,443 |
| 1963. | 761 | 131 | 1,455 | 812 | 5,644 | 6,351 | 1,683 | 1,580 | 2,741 | 3,079 | 78 | 143 | 24,458 |
| 1964......... | 753 | 114 | 1,481 | 887 | 5,981 | 7,188 | 1,846 | 1,671 | 2,991 | 3,393 | 90 | 161 | 26,556 |
|  | Percentages of Total Live Births |  |  |  |  |  |  |  |  |  |  |  |  |
| Av. 1941-45 | 4.4 | 4.9 | 7.1 | 4.5 | 3.1 | 4.8 | 3.8 | 3.6 | 4.5 | 5.0 | .. | .. | 4.2 |
| " 1946-50 | 3.6 | 5.3 | 6.9 | 4.5 | 2.9 | 4.0 | 4.0 | 4.2 | 4.9 | 5.9 |  |  | 4.1 |
| " 1951-55 | 3.2 | 5.1 | 5.9 | 4.0 | 3.2 | 3.2 | 4.5 | 4.4 | 4.8 | 6.1 | 12.9 | 7.5 | 3.8 |
| " 1956-60 | 3.9 | 5.2 | 6.3 | 4.1 | 3.3 | 3.2 | 5.2 | 5.0 | 5.3 | 6.4 | 14.2 | 10.8 | 4.1 |
| 1962. | 4.1 | 4.7 | 7.2 | 4.5 | 3.8 | 3.7 | 6.8 | 5.9 | 6.6 | 7.4 | 16.6 | 11.9 | 4.8 |
| 1963......... | 4.9 | 4.4 | 7.7 | 5.1 | 4.2 | 4.1 | 7.4 | 6.7 | 7.1 | 8.2 | 15.6 | 12.3 | 5.3 |
| 1964......... | 5.1 | 4.2 | 8.1 | 5.8 | 4.6 | 4.7 | 8.5 | 7.4 | 8.3 | 9.5 | 17.5 | 12.7 | 5.9 |

${ }^{1}$ Figures for Newfoundland are included from 1949, and those for the Yukon and Northwest Territories from 1951.

Multiple Births.-Approximately one confinement in 90 in Canada results in the birth of more than one child as compared with one in 85 several years ago-in other words, the chances of a confinement resulting in the birth of more than one child are fewer now than formerly. The chance of a mother delivering twins is about one in 90 , triplets, one in about 10,000 and quadruplets, one in about 750,000 or more. Two sets of quadruplets were born in Canada during 1960-the first since 1957-and one set in each of 1962, 1963 and 1964. In 1964 a total of 453,614 mothers bore a total of 458,464 infants, of which 452,915 , or almost 99 out of every 100, were born alive.

Other facts illustrated by Table 6 are that the proportion of stillbirths is higher among multiple than among single births, about twice as high for twins and between three and five times as high for triplets.

[^83]
## 6.-Single and Multiple Births, Live and Stillbora, ${ }^{1} 1962$-64

| Confinements and Births | Numbera |  |  | Percentages |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1962: | $1963{ }^{2}$ | 19644 | 1962 | 1963 | 1904 |
| Confinements.. | 470,345 | 466,537 | 453,614 | 100.0 | 104.0 | 100.0 |
| Single................ | 465,136 | 461.569 | 448,814 | 98.9 | 98.9 | 98.9 |
| Twin. | 5.159 | 4,930 | 4,751 | 1.1 | 1.1 | 1.0 |
| Triplet. | 49 | 37 | 48 | $\cdots$ | $\cdots$ | -- |
| Quadruplet........... | 1 | 1 | 1 | $\cdots$ | $\cdots$ | ** |
| Births.. | 475,005 | 471,544 | 458,464 | 100.0 | 104.* | 100.0 |
| SingleLive... | 459,539 | 458, 109 | 443,602 | 98.8 | 98.8 | 98.8 |
| Stillborn. | 5,597 | 5,460 | 5,212 | 1.2 | 1.2 | 1.2 |
| Twin- |  |  |  |  |  |  |
| Live... | 10,006 | 9,553 | 9+174 | 97.0 | 96.9 | 96.5 |
| Stillborn. | 312 | 307 | 328 | 3.0 | 3.1 | 3.5 |
| TripletLive.... | 144 | 104 | 136 | 98.0 | 93.7 | 94.4 |
| Still ${ }^{\text {a }}$ ora | 3 | 7 | 8 | 2.0 | 6.3 | 5.6 |
| Quadruplet- |  |  |  |  |  |  |
| Live..... | 4 | 1 | 3 | 100.0 | 25.0 | 75.0 |
| Stillborn, | - | 3 | 1 | - | 75.0 | 25.0 |
| Tetals, Live Births. | 469,693 | 465,767 | 452,915 | 98.8 | 88.8 | 88.8 |
| Totals, Stillborn | 5,912 | 6,777 | 5,549 | 1.2 | 1.2 | 1.2 |

1 Unless otherwise indicated, includes only foetuses of 28 or more full weeks gestation, stillbirths of $20-27$ weeks gestation. $\quad$ Includes 45 stillbirths of $20-27$ weelss gestation. - Includes 29 atill births of $20-27$ weeics gestation.

Fertility Rates.-The sex and age composition of a population is obviously an important factor in determining crude birth, marriage and death rates. Since almost all children born each year are to women between the ages of 15 and 45 , variations in the proportion of women of these ages to the total population will cause variations in the crude birth rate of different countries-or of different regions within a country-even though the actual rates of reproduction or fertility of the women in these age groups in each country or region are identical.

A more accurate measure of the fertility of a population would be one based on the number of women of reproductive age, that is those 'able' to bear children, and a still more accurate measure would be one based on the number within this group that are married, that is those 'eligible', as it were, to bear children. Each type of rate bas its uses, depending on the comparisons required. The two types--generally referred to as crude fertility ratesare compared in Table 7, and indicate the variations in each type as between provinces and the provincial trends over the years 1962-64.

The number of infants born in relation to every 1,000 women in the population between the ages of 15 and 45 has been declining for the past few years, dropping from 124 in 1962 to 115 in 1964. However, the rates varied among the provinces from 104 to 171 during the past three years; in 1964 Newfoundland, Prince Edward Island, Saskatchewan, New Brunswick, Alberta and Nova Scotia had the highest rates and British Columbia, Quebec, Ontario and Manitoba, in that order, the lowest. On the other hand, the average annual
number of infants born to every 1,000 married women in the country as a whole dropped from 176 to 165 during the same period. According to this measure, the five eastern provinces and Saskatchewan had, on the whole, the highest rates.
7.-Crude Fertility Rates, by Province, 1302-64

| Province or Territory | Rates per 1,000 Total Women 15-44 Years of Agel |  |  | Rates per 1,000 Married Women 15-44 Years of Agel |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1962 | 1963 | 1864 | 1962 | 1963 | 1984 |
| Newfoundland. | 171.4 | 169.9 | 156.7 | 262.1 | 262.2 | 246.5 |
| Prince Edward Island. | 150.0 | 155.2 | 142.0 | 228.4 | 245.0 | 228.2 |
| Nova Scotis. | 134.5 | 129.4 | 124.7 | 191.1 | 185.0 | 180.4 |
| New Brunswick | 142.2 | 134.0 | 128.9 | 213.4 | 203.2 | 198.0 |
| Quebec. | 117.3 | 113.6 | 109.0 | 187.8 | 182.5 | 175.8 |
| Ontario. | 120.7 | 118.3 | 113.7 | 165.6 | 159.3 | 153.6 |
| Manitoba | 124.7 | 121.9 | 115.8 | 170.3 | 167.2 | 158.1 |
| Saskatchewan. | 133.3 | 135.4 | 129.4 | 183.4 | 187.7 | 180.8 |
| Alberta. | 140.0 | 135.9 | 125.9 | 181.5 | 176.7 | 163.4 |
| British Columbia. | 117.8 | 113.1 | 104.7 | 153.1 | 147.8 | 136.9 |
| Yukon Territory.. | 182.3 | 172.1 | 165.8 | . | $\cdots$ | . |
| Northwest Territories. | 252.0 | 263.9 | 275.2 | . | . |  |
| Canada | 124.1 | 181.0 | 115.2 | 176.1 | 172.6 | 165.4 |

1 Since the number of births to women over 44 is quite small, ratea are here restricted to women under 45.
: Excludes the Yukon and Northwest Territories.
The rates shown in Table 7 are crude in the sense that they do not take into account differences in fertility in the component age periods within the female reproductive life span, nor the proportions of married women in each age period. It is therefore conventional practice to calculate what are termed age-specific fertility rates, i.e., the number of infants born annually to every 1,000 women in each of the reproductive age periods, again either for all women or for those who are married. Table 8 provides these two sets of rates-the former for 1941, 1951 and 1956-64 and the latter for 1962-64 in addition to the census years from 1941 to 1961.

Another measure of fertility in a country is obtainable from what is conventionally referred to as a gross reproduction rate. The gross reproduction rates shown in Table 8 indicate the average number of female children born each year to each woman living through the child-bearing ages. In other words, this figure represents the average number of females that would be born to each woman who lived to age 50 if the fertility rate of the given year remained unchanged during the whole of her child-bearing period. A gross reproduction rate of 1.000 indicates that, on the basis of current fertility and without making any allowance for mortality among mothers during their child-bearing years, the present generation of child-bearing women would exactly maintain itself. Canada has always had one of the highest gross reproduction rates among the industrialized countries of the world. Even during the period of low birth rates in the 1930s the rate varied between 1.300 and 1.500 and since World War II has ranged from 1.640 to a record high of 1.915 in 1959 ; in 1964 the rate stood at 1.720 , still 72 p.c. more than the number required for the population to replace itself. With minor exceptions, provincial reproduction rates are also well above the replacement level.

Table 8 indicates that in 1964, considering all women whether married or not, women in their 20 s were the most reproductive, as might be expected; on the average, for every 1,000 women between the ages of 20 and 25,216 infants were born during that year or, expressed another way, about one woman out of four in that age group gave birth to a live-born infant. This compares with a rate of 206 for women in the age group 25-29, which is closer to one in five. However, among married women, teen-age mothers have consistently had the highest fertility, with one out of two bearing a child each year on the average, while about 34 out of every 100 married women in their early 20 s had a child every year as compared with about one in four women in their late 20 s .
8.-Age-Specific Fertility Rates per 1,00 Women, by Age Group, 1941-64
(Exclusive of Newioundland for all years and the Yukon and Nortbwest Territories for 1941)

| Year | Aze Group |  |  |  |  |  |  | Grose <br> Reproduction Rate |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 |  |
|  | Total Women |  |  |  |  |  |  |  |
| 1941. | 30.7 | 138.4 | 159.8 | 122.3 | 80.0 | 31.6 | 3.7 | 1.377 |
| 1951. | 48.1 | 188.7 | 198.8 | 144.5 | 86.5 | 30.9 | 3.1 | 1.701 |
| 1856. | 55.9 | 222.2 | 220.1 | 150.3 | 89.6 | 30.8 | 2.9 | 1.874 |
| 1967. | 50.2 | 227.1 | 224.1 | 149.4 | ${ }_{87}^{90.7}$ | 30.7 | ${ }_{2} .8$ | 1.907 |
| 1959 | 69.2 60.4 | 236.5 | 2223.7 | 147.9 | 887.6 | 28.9 28.5 | 2.7 | 1.886 1.915 |
| 1960. | 59.8 | 233.5 | 224.4 | 146.2 | 84.2 | 28.5 | 2.4 | 1.893 |
| 1961. | 58.2 | 233.6 | 219.2 | 144.9 | 81.1 | 28.5 | 2.4 | 1.888 |
| 1962. | 55.3 | 232.4 | 215.6 | 148.4 | 77.0 | 27.5 | 2.1 | 1.836 |
| 1963. | 53.5 | 228.2 | 212.5 | 140.9 | 75.7 | 25.9 | 2.1 | 1.800 |
| 1964. | 50.6 | 216.2 | 206.0 | 136.0 | 72.1 | 25.0 | 2.1 | 1.720 |
|  | Married Women |  |  |  |  |  |  |  |
| 1941.. | 453.1 | 340.2 | 237.8 | 158.3 | 99.1 | 38.9 | 4.5 |  |
| 1951. | 498.5 | 350.4 | 248.1 | 168.7 | 100.6 | 36.6 | 3.7 | $\ldots$ |
| 1956. | 551.5 | 381.7 | 265.5 | 169.8 | 101.0 | 35.6 | 3.4 | $\ldots$ |
| 1961. | 541.2 | 374.4 | 25.6 | 161.4 | 89.9 | 32.1 | 2.8 | $\cdots$ |
| 1962. | 544.7 547.4 | 367.8 356.8 | 253.2 251.8 | 159.1 155.8 | 84.9 83.1 | 30.8 28.8 | 2.5 2.4 | $\ldots$ |
| 1964. | 473.0 | 344.2 | 243.8 | 149.8 | 78.6 | 27.6 | 2.4 | $\cdots$ |

Age of Parents.-Age of parents is an important variable in any analysis of birth statistics. The distribution of legitimate and illegitimate live births by age of the parents is given in Table 9.

Over 7 p.c. of the legitimate children born in 1964 were born to mothers under 20 years of age, in over one third of the births the mother was under 25 years, and in two thirds, under 30 years; in almost one fifth of the births the father was under 25 years of age, and in over 49 p.c. of all births the father was under 30 years. On the other hand, almost 38 p.c. of the illegitimate infants born were born to mothers under 20 years of age and an additional 34 p.c. to mothers under 25 years. The average age of all the married mothers to whom a child was born in 1964 was 27.9, and of the fathers 31.1 years; ten years ago the average ages of the parents were 28.4 and 31.9 , and thirty years ago 29.3 and 33.7 , respectively.

The median age of unmarried mothers who bore a !ive-born child in 1964 was 21.2; that is, half of the mothers of the 25,803 'illegitimate' children delivered in 1964 were under 21.3 years of age.

## 9．－Live Births，by Age of Parents， 1964

（Exclusive of Newloundland）

| Age Group | Legitimate |  |  |  | Illegitimate |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Fathers |  | Mothers |  | Mothers |  |
|  | No． | p．c． | No． | p．c． | No． | p．c． |
| Under 20 years． | 4，717 | 1.1 | 30,781 | 7.5 | 9，786 | 38.8 |
| Under 15 years． |  | $\rightarrow$ | 27 | $\cdots$ | 182 | 0.7 |
| 15 years．． |  | － | 265 1.533 | 0.1 | － 531 | 2.1 |
| 17 ＂، | 270 | 0.1 | 1，533 | 0.4 1.2 | 1,341 2,333 | 5.3 9.3 |
| 18 ＂ | 1． 173 | 0.3 | 9，224 | 2.2 | 2，743 | 10.9 |
| 19 ＂ | 3，251 | 0.8 | 14，752 | 3.6 | 2，656 | 10.5 |
| 20－24＂ | 76.833 | 18.7 | 128，368 | 31.1 | 8，759 | 34.7 |
| 25－29＂ | 120.757 | 29.3 | 114，715 | 27.8 | 3，397 | 13.5 |
| $30-34$＂ | 100.917 | 24.5 | 78，778 | 19.1 | 1，880 | 7.4 |
| 35－39＂ | 62,723 | 15.2 | 44，079 | 10.7 | 1，018 | 4.0 |
| 40－44＂ | 30，522 | 7.4 | 14，578 | 3.5 | 364 | 1.4 |
| 45－49＂ | 10,761 | 2.6 | 1，044 | 0.3 | 32 | 0.1 |
| 50 years or over． | 4，552 | 1.1 | 10 | －－ | － | － |
| Totals，Stated Ages．． | 411，782 | 100.0 | 412，353 | 100．0 | 25，236 | 109.0 |
| Ages not stated． | 650 | ．．． | 79 | ．．． | 567 | ．．． |
| Totals， 111 Ages． | 412，432 | 109．0 | 412，432 | 100.1 | 25，803 | 109.0 |
| Average ages．．．．．．．．．．．．．．．．．．．．．．．．．．．．yrs． | $\begin{aligned} & 31.1 \\ & 30.2 \end{aligned}$ |  | $\begin{aligned} & 27.9 \\ & 26.9 \end{aligned}$ |  | $\begin{array}{r} 23.4 \\ 21.2 \end{array}$ |  |
|  |  |  |  |  |  |  |

＇The age above and below which half of the births occurred．
Order of Birth．－Table 10 shows the order of birth of all live－born infants in 1964 according to the age of the mother．As would be expected，30，710，or three fourths of the 40,567 infants born to mothers under 20 years of age，were the first live－born child， whereas almost six out of every ten of the children born to mothers of $20-24$ years were their second or later live－born child．In 1964， 209 infants were born to mothers who had not yet reached their 15th birthday．

10．－Order of Birth of Live－Born Children，by Age of Mother， 1964
（Exclusive of Newfoundland）

| Order of Birth of Child | Age of Mother |  |  |  |  |  |  |  |  |  | Per－ centage of Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Under } \\ & 15 \end{aligned}$ | 15－19 | 20－24 | 25－29 | 30－34 | 35－39 | 40－44 | $\begin{gathered} 45 \\ \text { or } \\ \text { Over } \end{gathered}$ | $\begin{gathered} \text { Age } \\ \text { Not } \\ \text { Stated } \end{gathered}$ | All Agea |  |
|  | No． | No． | No． | No． | No． | No． | No． | No． | No． | No． |  |
| Iat child． | 207 | 30，508 | 58，376 | $21+223$ | 7，164 | 2，680 | 651 | 37 | 552 | 121，383 | 27.7 |
| 2nd＂ | 2 | 8.191 | 44，475 | 31，742 | 12，982 | 4.772 | 998 | 41 | 34 | 103， 237 | 23.6 |
| 3rd | － | 1，462 | 21，918 | 28．410 | 17，471 | 6,754 | 1.596 | 83 | 12 | 77.706 | 17.7 |
| 4th | － | 177 | 8.363 | 17，790 | 14，884 | 7，538 | 1，887 | 105 | 12 | 50，758 | 11.6 |
| 5 th＂ |  | 15 | 2，863 | 9.673 | 10，443 | 6.400 | 2,048 | 106 | 6 | 31.554 | 7.2 |
| 6th＂ | － | 1 | 831 | 5.065 | 6，753 | 4，867 | 1，562 | 111 | 3 | 19，193 | 4.4 |
| 7th＂ | － | － | 223 | 2.432 | 4，370 | 3，497 | t，313 | 92 | 3 | 11，930 | 2.7 |
| 8 tb ＂ | － | $\sim$ | 49 | 1，122 | 2.778 | 2，511 | 1，124 | 109 | 4 | 7，697 | 1.8 |
| 9th＂ | － | － | 11 | 418 | 1.695 | 1，878 | 860 | 67 |  | 4，930 | 1.1 |
| 10th＊ | － | － | 3 | 157 | 1.032 | 1，385 | 714 | 74 |  | 3，365 | 0.8 |
| 11th＂ | － | － | 2 | 47 | 602 | 1，022 | 577 479 | 87 | 二 | 2,317 1,598 | 0.5 |
| 12th＂ | $\square$ | 二 | － | 12 | ${ }_{127}^{286}$ |  | 479 340 | 55 38 | － | 1，598 | 0.4 |
| 14th＂ | 二 | － | $\square$ | 3 2 2 | 127 49 | 487 | 340 293 | 38 36 | － | 675 669 | 0.2 |
| 15th＂ | － | － | － | 2 | 18 | 150 | 217 | 23 |  | 410 | 0.1 |
| 16tb＂ | － | － | － | － | 7 | 62 | 130 | 15 |  | 214 | － |
| 17tb＂ | － | － | － | － | － | 30 | 73 | 9 | － | 112 | － |
| 18th＂ | － | － | － | － | － | 12 | 39 | 7 | 二 | 58 | － |
| 19tb＂ | － | － | － | 二 | 二 | 7 | 20 | 4 | － | 28 | $\cdots$ |
| 20th or over Not stated． | － | 9 | －13 | 13 | 7 | ${ }_{6}$ | 20 1 | 4 | 20 | 69 |  |
| Totals． | 209 | 40，358 | 137，127 | 118，112 | 80，658 | 45，087 | 14，942 | 1，086 | 646 | 438，235 | 100.0 |

Table 11 summarizes the pattern of family formation since 1941.
11.-Percentage Distribution of Legitimate Live Births, by Order of Birth, 1941-64
(Exclusive of Newfoundland)

| Year | lat Cbild | 2nd Cbild | 3rd Child | 4th and Later Children | Tota |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1941. | 32.7 | 21.8 | 13.5 | 32.0 | 100.0 |
| 1951. | 26.7 | 25.8 | 17.6 | 29.9 | 100.0 |
| 1956.. | 25.2 | 24.3 | 18.3 | 32.2 | 100.0 |
| 1957. | 25.8 | 23.9 | 18.3 | 32.2 | 100.0 |
| 1858. | 25.4 | 23.8 | 18.2 | 32.6 | 100.0 |
| 1959. | 24.8 | 24.0 | 18.2 | 32.9 | 100.0 |
| 1980.. | 24.5 | 23.8 | 18.5 | 33.1 | 100.0 |
| J961.. | 24.1 | 23.6 | 18.5 | 33.8 | 100.0 |
| 1962.. | 24.0 | 23.7 | 18.4 | 33.9 | 100.0 |
| 1963. | 24.3 | 23.6 | 18.5 | 33.6 | 100.0 |
| 1964.. | 25.0 | 23.8 | 18.3 | 32.9 | 100.0 |

Birthweight.-Excluding Newfoundland, information on birthweight of newborn infants has recently become available from provincial records of birth. These data, in addition to their usefulness in calculating the average weights of newborn infants, are of importance from the public health and medical points of view in throwing light on the number of immaturely developed foetuses that are delivered alive. According to criteria recommended by the World Health Organization, infants of 5 lb . or less at birth are considered 'immature' and hence exposed to a much greater risk of dying than those over this weight. Weight at birth depends on a host of maternal factors, most of which are not included in the birth records, but some information is available on the age of the mother and length of pregnancy before delivery.* Analysis of this information shows that (1) there are variations in average weight according to the age of the mother, (2) women under 20 and over 35 tend to produce higher proportions of immature infants, so that the late 20s and early 30 s would appear to be the ideal ages for motherhood, and (3) almost all infants of less than 28 weeks gestation are delivered 'immature' according to the definition. The average single male infant born at full term weighs about $7 \frac{1}{2} \mathrm{lb}$. at birth and the average female about 4 oz . less.

Stillbirths. $\dagger$-The 5,520 stillbirths of at least 28 weeks gestation that were debivered in 1964 represented a ratio of 12.2 for every 1,000 foetuses born alive. As is evident from Table 12, the stillbirth rate has been decreasing steadily and has been cut by more than balf over the past quarter-century Although the variations between provincial rates have never been wide, rates in some providces have been reduced more than in others. The stillbirth rate among unmarried mothers has been consistently higher than that among married mothers but the difference is narrowing.

[^84]12.-Stillbirths and Rates per 1,90 Live Births, by Province, 1941-64

| Year | Bord to All Mothers |  |  |  |  |  |  |  |  |  |  |  |  | Born to Unmarried Mothers ${ }^{1}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Nad. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | $\begin{aligned} & \text { Yu- } \\ & \text { koy } \end{aligned}$ | N. ${ }_{\text {W. }}^{\text {W. }}$ | $\mathrm{C}_{\text {Cbs- }}$ | No. | $\xrightarrow[\text { P.C. }]{\text { of }}$ ( ${ }_{\text {ctal }}$ |
|  | NUEEERS (28 WEEKS OR more aestation) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Av. 1941-45 | 191 | 50 | 388 | 295 | 2.786 | 1.988 | 345 | 348 | 327 | 309 | 1 |  | 6.845 | 355 |  |
| /4 1946-50 | 215 | 54 | 358 | 320 | 2.898 | 2.020 | 349 | 350 | 385 | 352 | 2 | 8 | 7.187 | 343 | 4.85 |
| ${ }^{4} 1.1951-55$ | 222 | 52 | 337 |  | 2.705 | 2.017 | 336 | 313 | 425 | 374 | ${ }^{6}$ | 11 | 7.088 | 316 | 4.80 |
| " 1956-60 | 274 | 46 | 304 |  | 2,446 | 1,992 | 301 | 262 | 388 | 418 | 5 | 12 | 6.714 | 291 | 4.51 |
| 1082........ | 248 | 58 | 277 | 238 | 1.824 | 1, 025 | 276 | 248 | 388 | 377 | 3 |  |  | 315 | 5.59 |
| 1963......... | 265 | 52 | 240 | 236 | 1.800 | 1.873 | 269 | 243 | 367 | 365 | 5 | 17 | 5. 732 | ${ }_{323}$ | 5.91 |
| 1864........ | 255 | 46 | 260 | 216 | 1.644 | 1.790 | 285 | 248 | 373 | 373 | 7 |  | (5.520 | 346 | 6.57 |
|  | Rates |  |  |  |  |  |  |  |  |  |  |  |  | Rate per 1,000 Illegitimate Live Births |  |
| Av. 1941-45 | 20.5 | 22.8 | 25.6 | 22.6 | 28.5 | 25.6 | 21.8 | 18.9 | 17.4 | 17.5 | 11.4 | 15.7 | 24.7 |  | 0.8 |
| "1946-50 | 17.4 | 18.9 | 19.9 | 19.0 | 25.1 | 19.2 | 18.1 | 18.0 | 15.9 | 13.6 | 8.7 | 12.5 | 20.2 |  | 4.2 |
| ${ }^{\prime \prime}$ 1951-55 | 17.0 | 19.0 | 18.4 | 17.7 | 21.0 | 15.6 | 15.7 | 13.3 | 13.7 | 11.8 | 14.1 | 16.5 |  |  | 0.3 |
| " 1956-60 | 18.3 | 17.1 | 15.9 | 16.1 | 17.5 | 13.0 | 13.4 | 10.9 | 10.5 | 10.7 | 10.7 | 12.3 | 14.3 |  | 5.6 |
| 1962....... | 16.5 | 20.7 | 14.3 | 14.5 | 13.5 | 12.3 | 12.0 | 10.6 | 10.0 | 9.9 | 5.5 | 16.8 | 12.5 |  | 4.4 |
| 1963......... | 17.2 | 17.6 | 12.6 | 35.0 | 13.5 | 12.1 | 11.8 | 10.3 | 9.5 | 9.7 | 10.0 | 14.6 | 12.3 |  | 3.6 |
| 1964....... | 17.4 | 16.9 | 14.2 | 14.1 | 12.6 | 11.7 | 13.1 | 10.9 | 10.3 | 10.4 | 13.6 | 18.2 | 12.2 |  | 3.4 |

${ }^{\text {I }}$ Exclusive of Newfoundland tor all years and the Yakoa and Northwest Territories for 1941-50. $\quad$ Figures for Newfoundland are included from 1949.

Table 13 illustrates the fact that the risk of having a stillborn child increases with the age of the mother. Although stillbirth rates for mothers of all ages have been declining, they continue to be three to four times as high for mothers over 40 years of age as for mothers under 30 . The average age of mothers who bore stillborn children in 1964 was 29.9 years; the median age was 29.3 . The average age of mothers who bore legitimate live-born children was 27.9 and of those who bore illegitimate live-born offspring was 23.4 . Causes of stillbirths in 1964 are shown in Table 14.
13.-Stillbirths and Ratios per 1,000 Live Births, by Age of Mother, 1964
(Exclusive of Newfoundland)


1 The age above and below which hall of the atillbirtha cocurred.
14.-Stillbîrths, by Cause, 1964

| Leteraational List No. | Cause | Males | Femalea | Total |
| :---: | :---: | :---: | :---: | :---: |
|  |  | No. | No. | No. |
| Y 30 | Chronic disease in mother.................................... | 87 | 61 | 148 |
| Y 81 | Acute disease in motber. .................................... | 12 | 14 | 26 |
| Y 32 | Diseases and conditions of pregnancy and childbirth......... | 240 | 201 | 141 |
| $Y^{Y} 33$ | A biorption of toxic substance Irom mother.................... | ${ }^{1}$ | 12 | 1 |
| Y 34 | Diffeulties in tabour.... | 132 | 120 | 252 |
| Y ${ }_{38}^{35}$ | Other causes in mother . .7.................................... | 1.137 | $\begin{array}{r}34 \\ 958 \\ \hline\end{array}$ | 2.095 |
| Y 37 | Birth iajury................. | 1.40 | 25 | 65 |
| Y 38 | Congenital malformation of foetus. | 276 | 398 | 674 |
| Y 39 | Diseasers of foetus and ill-defined causes. | 882 | 861 | 1.743 |
|  | All Causes. | 2,848 | 2,672 | 5,520 |

## Section 3.-Deaths*

No official crude $\dagger$ death rates are available prior to 1921 , but some indication of these may be obtained from studies of the early censuses as follows:-

| Intercensal Period | Estimated Average Annual Crude Death Rote (per 1,000 Population) | Intercensal Period | Estimated Average Amnual Crude Deatk Rate (per 1,000 Population) |
| :---: | :---: | :---: | :---: |
| 1851-61. | 22 | 1891-1901. | 16 |
| 1861-71. | 21 | 1901-11. | 13 |
| 1871-81. | 19 | 1911-21. | 13 |

As is typical of pioneer populations, Canada had a high death rate in the mid-1850s Then the country was still in the throes of pioneer settlement. The crude death rate during that period is estimated as between 22 and 25 . Although no data are available, it is assumed that, while mortality at all ages was high, the rate among infants, children and young adults must have been particularly so since even in the 1920 mortality in these ages was still quite high. With the gradual increase in population density and in urbanization and improved sanitation and medical services, the crude rate was halved during the 80 years between 1851 and 1930, dropping from about 22 to 11 . It declined steadily to slightly over 8 in the late 1950 and dropped to a low of 7.6 in 1964. This is one of the lowest crude death rates in the world.

Table 1, pp. 236-237, shows the trends since 1941 in the provinces and territories. The generally low rates in the Prairie Provinces are partly the result of their younger average population; the uniformly higher rate in British Columbia is attributable mainly to a high proportion of people in the older age groups.

## Subsection 1.-General Mortality

Age and Sex Distribution of Deaths.-During the period of national vital statistics ( 1921 to date), the mortality pattern at all ages has been steeply downward. Of major significance in lowering the over-all death rate were the reductions in infant mortality, in childhood death rates and in those of young adults. In 1931, over 19 p.c. of all male deaths occurred among persons of five to 45 years of age; in 1964 only a little over 10 p.c. took place in this age group. Among females in the same age group the proportion dropped from just under 22 p.c. to 7.4 p.c.

[^85]Tables 15 and 16 illustrate the very large reductions in death rates that have taken place since 1931 in each age group of the population. By far the greatest reductions have been among the young of both sexes. However, even though the rates for females at every age have always been consistently lower than those for males, female death rates have been declining faster and the differences are gradually widening. Between 1931 and 1964 the rates for all females dropped by 34 p.c. as compared with only 16 p.c. for males.
15.-Percentage Change in Death Rates for Each Age Group, 1931 to 1964

| Age Group | Males | Females | Age Group | Males | Females |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Under 1 year. ${ }_{5-9}^{1-4}$ years. | $\begin{aligned} & -70.6 \\ & -83.8 \\ & -72.7 \\ & -66.7 \\ & -52.0 \\ & -43.7 \\ & -55.9 \\ & -51.4 \\ & -47.6 \\ & -33.3 \\ & -20.8 \end{aligned}$ | $\begin{aligned} & -71.2 \\ & -85.2 \\ & -76.5 \\ & -80.0 \\ & -77.3 \\ & -81.2 \\ & -84.2 \\ & -78.6 \\ & -72.9 \\ & -60.0 \\ & -51.5 \end{aligned}$ | 50-54 years. | -11.2 | -43.3 |
|  |  |  |  |  |  |
|  |  |  | 60-64 " | + 9.2 | -38.2 |
| 10-14 " |  |  | 65-69 " | + 0.9 | $-33.0$ |
| 15-19 " |  |  |  |  | -33.2 |
| 20-24 " |  |  | 75-79 " | $-8.4$ | -32.8 |
| 25-29 " |  |  | $80-84$ " | -9.5 | -23.8 |
| $30-34$ $35-39$ |  |  | 85 years or over | -12.8 | -14.3 |
| 40-44 |  |  |  |  |  |
| 45-49 " |  |  | All Ages. | -16.2 | -34.4 |

Despite the very considerable reduction that has taken place in infant mortality, more deaths still occur in the first year of life than in any other single year. Of the total deaths occurring in 1931, almost one quarter were of children under five years of age and more than three quarters of those were of children under one year of age; of the deaths occurring in 1964, almost 9 p.c. were of children under five years and of those about 86 p.c. were under one year. Most of the reduction took place among children over the age of one month but there was also a notable decrease in all childhood ages up to five years.


The reductions in the mortality rates in early and middle years of life have had the effect of increasing the number of people in the older age groups and raising the average age at death．In 1931 the average age at death of males was 43.1 years and of females 44.8 years；by 1964 this had advanced to 60.8 years and 64.5 years，respectively．On the other


 in median age were 17.3 years for males and 20.8 for females．

16．－Distribution of Deaths by Age and Sex，1931，1941，1951， 1961 and 1964

|  | 蜀 |
| :---: | :---: |
|  | 震 |
| 홈 | 亳 |
|  | 電 |
| 吕 | 蔇 |
|  | 両 |
| \＃ | 墍 |
|  | 蒾 |
| 罟 | 皆 |
|  | 喪 |



16.-Distribution of Deaths by Age and Sex, 1931, 1941, 1951, 1961 and 1994-concluded

| Age Group | $1931{ }^{17}$ |  | 1941 |  | 1951 |  | 1961 |  | 1984 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Male | Female | Male | Female | Male | Female | Male | Female | Mals | Femasle |
|  | Rates pear 1,000 Poptlation |  |  |  |  |  |  |  |  |  |
| Under 1 year. | 94.4 | 74.4 | 67.0 | 51.9 | 42.7 | 34.0 | 30.5 | 23.7 | 27.8 | 21.4 |
| 1-4 years. | 6.8 | 6.1 | 4.7 | 4.0 | 2.1 | 1.8 | 1.3 | 1.0 | 1.1 | 0.8 |
| 5 - ${ }^{\text {\% }}$ | 2.2 | 1.7 | 1.7 | 1.3 | 1.0 | 0.7 | 0.6 | 0.4 | 0.8 | 0.4 |
| 10-14 | 1.5 | 1.5 | 1.4 | 1.0 | 0.8 | 0.5 | 0.6 | 0.3 | 0.5 | 0.3 |
| 15-19 " ${ }^{15}$ ".......... | 8.5 | 2.2 | 2.0 | 1.5 | 1.4 | 0.9 | 1.2 | 0.5 | 1.2 | 0.5 |
| $\begin{array}{ccc}20-24 & \text { " } & \cdots \ldots \ldots \ldots \\ 25-29 & \text { " } & \cdots \ldots \ldots \ldots\end{array}$ | 3.2 3.4 | 3.2 3.8 | 2.6 2.7 2.8 | 2.0 2.5 | 1.9 1.8 | 1.0 1.1 | 1.7 | 0.6 | 1.8 | 0.6 |
| 30-34 | 3.5 | 4.2 | 2.8 | 2.8 | 2.1 | 1.5 | 1.6 | 0.9 | 1.7 | 0.9 |
| 35-39 " | 4.2 | 4.8 | 3.8 | 3.4 | 2.5 | 2.0 | 2.3 | 1.4 | 2.2 | 1.3 |
| 40-44 | 5.4 | 5.0 | 5.0 | 4.5 | 3.9 | 3.0 | 3.4 | 2.0 | 3.8 | 2.0 |
| 45-49 " | 7.2 | 8.6 | 7.3 | 6.0 | 6.4 | 4.5 | 5.8 | 3.2 | 5.7 | 3.2 |
| 50-54 " | 10.7 | 9.0 | 10.6 | 8.1 | 10.4 | 6.5 | 9.6 | 5.3 | 9.5 | 5.1 |
| 55-59 " | 15.4 | 13.4 | 16.0 | 12.3 | 16.2 | 10.2 | 15.2 | 8.0 | 15.0 | 7.7 |
| ${ }_{60}^{60}-64$ " | 22.9 | 20.7 | 24.2 | 18.5 | 24.5 | 16.1 | 24.0 | 12.8 | 25.0 | 12.8 |
| 65-69 " | 35.2 | 30.3 | 37.3 | 30.4 | 35.1 | 24.9 | 35.7 | 21.4 | 35.5 | 20.3 |
| 70-74 " | 35.0 | 49.1 | 58.5 | 47.0 | 54.5 | 41.6 | 54.0 | 34.2 | 54.1 | 32.8 |
| 75-79 | 87.4 | 82.9 | 95.7 | 79.7 | 87.6 | 73.3 | 81.8 | 59.2 | 80.1 | 55.7 |
| 80-84 | 134.1 | 127.1 | 147.6 | 131.2 | 135.5 | 120.7 | 125.1 | 101.2 | 121.3 | 96.9 |
| 85 years or over. | 228.1 | 212.6 | 241.9 | 229.3 | 235.1 | 212.0 | 208.9 | 192.2 | 198.8 | 182.3 |
| Totals, All Ages. | 14.5 | 9.6 | 10.8 | 9.1 | 10.1 | 9.8 | ¢.0 | 6.5 | 8.8 | 6.8 |
| Average age at death yrs. | 43.1 | 44.8 | 51.5 | 53.4 | 56.3 | 58.7 | 59.7 | 63.1 | 60.8 | 64.5 |
| Median age at desth ${ }^{\text {a }}$ " | 50.8 | 52.1 | 81.2 | 63.6 | 65.5 | 68.8 | 67.9 | 72.2 | 68.1 | 72.9 |

t Excludes the Yukon and Northwest Territories. number of annual denths occurred.
${ }^{2}$ The age above and below which half of the total

Table 17 indicates the variations from province to province in average and median ages at death; these, in turn, are dependent in large measure on the age distribution of the population as well as on varying mortality rates at each age. For example, in Newfoundland a high mortality rate among infants and young children reduces the average and median age for that province, but the reverse is the case in British Columbia and several other provinces with older populations.
17.-Average and Median Ages at Death, by Ser and Province, 1964

| Province or Territory | A verage Age at Death |  | Median Age at Death |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Mates | Females | Males | Females |
|  | yrs. | yrs. | $y$ rs. | yrs. |
| Newfoundland. | 54.5 | 56.5 | 64.6 | 69.0 |
| Prince Edward Island.... | 61.4 | 68.6 | 71.1 | 76.3 |
| Nova Scotia. ${ }^{\text {New }}$ Srunswick. | 62.4 60.6 | 66.2 64.2 | 69.2 60.0 | 74.4 73.7 |
| Quebec.......... | 56.8 | 60.8 | 64.2 | 69.6 |
| Ontario.......... | 61.9 | 67.0 | 68.0 | 73.9 |
| Manitoba...... | 63.4 | 65.0 | 71.1 | 73.5 |
| Suskatchewan..... | 64.1 | 64.5 | 72.8 | 74.0 |
| Alberca. ${ }^{\text {British }}$ Columbia | 60.2 65.2 | 61.2 67.8 | 68.6 72.3 | 75 |
| Yukon Territory....... | 48.9 | 31.8 | ... | ... |
| Northwest Territories, | 23.6 | 22.6 | ... | ... |
| Canada. | 60.8 | 64.5 | 68.1 | 72.9 |

${ }^{1}$ The age above and below which half of the totsl number of annual deathe occurred.
Deaths in Urban Centres.-Table 2, pp. 238-240, shows the numbers of deaths in urban centres of 20,000 population or over in 1964 and the average numbers for the period 1956-60; death rates for urban centres cannot be computed for these years since their populations are not known for intercensal periods.

Causes of Death.-Table 18 summarizes the most recent figures for deaths and death rates in Canada grouped according to the International Abbreviated List of 50 Causes. Over 80 p.c. of the deaths are caused by diseases of the heart and arteries, cancer, accidents, diseases of early infancy, the respiratory diseases, and nephritis. Because of the rise in the average age at death during the past thirty years, the proportion of deaths from causes that affect older people has increased. Cancer and diseases of the cardiovascular-renal systems now account for a larger proportion of all deaths. By the same token, deaths from causes that mainly affect children and young adults have declined.

18.-Deaths and Rates per 100,000 Population, according to the International Abbreviated List of 50 Causes, 1963 and 1964

| International List No. |  | Cause of Death | Numbers of Deaths |  | Rates per 100,000 Population |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Abbreviated List | Detailed List |  | 1963 | 1964 | 1963 | 1964 |
| B 1 | 001-008 | Tuberculosis of respiratory system. | 674 | 598 | 3.6 | 3.1 |
| B 2 | 010-019 | Tuberculosis, other forms.......... | 82 | 72 | 0.4 | 0.4 |
| B 3 | 020-029 | Syphilis and its sequelæ.......... | 117 | 91 | 0.6 | 0.5 |
| B 4 | 010 <br> 043 <br> 1 | Typhoid fever.............. | 1 | 2 | -- | -- |
| B 6 | 045-048 | Dysentery, all forms | 5 | 15 | - | 0.1 |
| B 7 | 050, 051 | Scarlet fever and streptococcal sore | 5 | 9 | .- | -. |
| B 8 | 055 | Diphtheria.... | 7 | 5 | -- | -. |
| B 9 | 056 | Whooping cough...... | 28 | 26 | 0.1 | 0.1 |
| B10 | 057 | Meningococcal infections. | 37 | 38 | 0.2 | 0.2 |
| ${ }^{\text {B11 }}$ | 058 | Plague............. | 16 | 5 |  | - |
| B13 | 084 | Smallpox........... |  | 5 |  | -- |
| B14 | 085 | Measles. | 73 | 58 | 0.4 | 0.3 |

## 18.-Deaths and Rates per toe, $\boldsymbol{H}^{*}$ Popuiation, according to the International Abbreviated List of 50 Causes, 1963 and 1364-concluded

| International Lial No. |  | Cause of Dexth | Numbers of Desths |  | Rates per 100,000 Population |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Abbre. viated List | Detailed List |  | 1963 | 1964 | 1963 | 1984 |
| $\begin{aligned} & \text { B15 } \\ & \text { B16 } \end{aligned}$ | 100-108 | Typhus and other ricisettsial diseases |  | 1 | - |  |
|  | 110-117 | Malaria.. | 1 | 1 |  |  |
| B17 | $\begin{aligned} & 052-0 j 1+ \\ & 059-07+ \end{aligned}$ | All other diseases classified as infective and |  |  |  |  |
|  | Ost-083. | parasitic................................ | 363 | 325 | 1.9 | 1.7 |
| B18 | 110-205 | Cancer (alt malignant neoplasms) | 25,077 | 25.637 | 132.7 | 133.3 |
|  |  | Cancer . ...................... | 23.697 | 24.177 | 125.1 | 186.7 |
|  | (201) | Hurtgkin's disease | 280 | 276 | 1.6 | 1.4 |
|  | (314) | Leukemia and aleuksemia | 1.369 | 1.184 | 6.1 | 8.2 |
| B19 | 210.239 | Berisn and unspecified neoplasme | 355 | 321 | 1.9 | 1.7 |
| B20 | 290 | Diabetes mellitus.... | 2,302 | 2,488 | 12.2 | 12.9 |
| $\stackrel{821}{822}$ | 290293 | Anæinias .......... | 352 | 316 | 1.9 | 1.6 |
|  | 330-334 | V躇cular lesions affecting central nervous syatem | 15,410 | 15,030 | 81.6 | 78.1 |
| B23 | 340 | Non-meningococeal meningitis............... | 178 | 179 | 0.9 | 0.9 |
| B24 | 400-102 | Rlieumatic fever .......... ${ }^{\text {a }}$. $\ldots \ldots \ldots$. | $\begin{array}{r}39 \\ \hline\end{array}$ | ${ }_{1}^{42}$ | 0.2 | 8.2 |
| B25 | 416.416 | Chronic rheumntic heart disense . . . . . . . . . | 1,403 | 1,323 | 7.4 | 6.9 |
| B26 | 420-422 | Artericscierutic and degenerative heart disense. | 45, E 27 | 46.378 | 241.5 | 241.1 |
| B27B28 | $430-434$$4+0-413$ | Other diseases of heart | 2,184 | 2.219 | 11.6 | 11.5 |
|  |  | Hypertension with heart disease. | 2,858 | 2,656 | 15.1 | 13.8 |
| B29 4 $4+-1+7$ |  | Hypertension without mention of beart..... | 770 | 803 | 4.1 | 4.2 |
| B30 | 4+1-147 | Influenza... | 1,183 | 300 | 6.3 | 1.6 |
| B31 4000493 |  | Preumonia. | 5,782 | 4,962 | 30.6 | 25.8 |
| B32 | $490-493$ $500-502$ | Bronchitis.... | 1,0\%* | 1,017 | 5.6 | 5.3 |
| 833 | 540.541 | - Jeer of stomach and duodenum. | 952 | 992 | 5.0 | 5.2 |
| B33 | 5*0 550-553 | Appendicitis. ........................... | 139 | ${ }_{9}^{162}$ | 0.7 | 0.8 4.8 |
|  | 543, 571, 572 | Oastritis. duodenitia, enteritis and colitis except liarther of the newborn. | 975 | 917 | 6.2 | 4.8 |
| B36 |  |  | 916 | 750 | 4.8 | 3.8 |
| B37 | 581 | Cirrhosis of tiver.......................... | 1,093 | 1,228 | 5.8 | 6.4 |
| B38 | 590-594 | Nepliritis and nephrnsis. | 1,399 | 1,279 | 7.2 | 6.6 |
| B39 |  | Hyperplasia of prostate..........tio...... | 512 | 447 | 5.41 | $4.6{ }^{1}$ |
| B40 | $\begin{array}{r} 640-652,8650 \\ 670-889 \\ 750-759 \\ 7 c 0-762 \end{array}$ | Complications of preganncy, childbitth and the puerperium. | 165 | 137 | 35.42 | 30.24 |
| B41 |  | Congenital malformations.................. | 2,699 | 2.589 | 14.3 | 13.5 |
|  |  | Birth injuries, postnatal asphyzia and atelectssis. | 2,400 | 2,426 | 13.8 | 12.6 |
| B43 | $\begin{aligned} & 763-768 \\ & 769-776 \end{aligned}$ | Infections of the new born.................... | 477 | 405 | 2.5 | 2.1 |
|  |  | Other diseases peculiar to early infancy and immaturity (unqualified) | 3,963 | 3,708 | 21.0 | 10.3 |
| B45 | 780-795 | Senility without mention of psychosis, tl defined and unknown causes. | 1.229 | 1,101 | 6.5 | 5.7 |
| BE47 | Residual | Alt other disemses............................ | 12,345 | 12,393 | 65.3 | 64.4 |
|  |  | Motor velijcle accidents | 4,451 | 4,862 | 23.6 | 25.3 |
| BE48 $\{$ |  | All other accidents | 5,804 | 5,702 | 30.7 | 29.6 |
| BE49 |  | Suicide. | 1,436 | 1.586 | 7.6 | 8.2 |
| BE50 |  | Homicide and operations of war............ | 247 | 246 | 1.3 | 1.8 |
|  |  | Totals, All Causes................. | 147,367 | 415.85\% | 779.9 | 358.8 |

1 Per 100,000 malea.
? Per 100,000 live births.
Accidents have displaced infectious diseases in recent years as one of the major killers. Table 19 shows clearly that accidents are, by far, the leading cause of death among males from age 1 to 45 and one of the five major causes above that age. Although less predomiont among females, accidents are also one of the leading causes of female death beyood the first year of life.

# 19.-Leading Causes of Death, by Sex at Various Aqe Groups, 1864 

(Ratee per 100,000 population)

| Cause | Males |  | Cause | Females |  | Cause | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | Rate |  | No. | Rate |  | No. | Rate |

## Under 1 Year



[^86]
# 19.-Leading Causes of Death, by Sex at Varlous Age Groups, 1964-concluded 

(Rates per 100,000 population)


## Subsection 2.-Infant Mortality

Table 1, pp. 236-237, and Table 20 show the striking improvement that has taken place in the rate of infant mortality during the past twenty years. Although 62,397 of the $2,342,626$ children born in the five years $1960-64$ died before reaching their first birthday, 157,576 others Lived who would have died at the infant mortality rate prevailing in the period 1926-30. This improvement is attributable to many factors-the higher proportion of births taking place in hospital or under proper prenatal and postnatal care, better supervision of water supplies, improved sanitation, pasteurization of malk, the use of antibiotics, improved home eavironment as a result of higher living standards and, in recent years, the generally lower age of mothers.

The variations that exist in infant mortality rates from province to province and from one locality to another may be explained by differences in the extent to which these factors apply provincially or locally. Among the provinces, the 1964 male infant mortality rates ranged from a low of 24 to a high of 35 , compared with the national average of 28-the latter including the very high rate among the Northwest Territories aboriginal population. Female rates ranged from 17 to 27 , compared with the national rate of 21 . While the national and provincial rates for both sexes have been declining steadily for some years, for some unknown reason there were recently a number of reversals in provincial rates.

Table 20 shows that mortality among male infants is 25 p.c. to 30 p.c. higher than that among female infants for Canada, with wider variations for the individual provinces. For the country as a whole, out of every 1,000 infant boys born alive in 1964, 28 died before reaching their first birthday, whereas out of every 1,000 infant girls born alive, 21 died within one year. As already pointed out, there are on the average 1,057 males born to every 1,000 females but, because male infant mortality is higher, the excess of males is reduced greatly by the end of the first year. For example, in 1961-64 there were 956,795 male children born compared with 907,280 female children, an excess of 49,515 or 5.5 p.c.; in the same period, 28,371 male children died during their first year compared with 20,949 female children so that the excess of males at one year of age was reduced to 42,093 or 4.7 p.c.
20.-Distribution of Infant Deaths by Province and Sex, 1941-44

| Province and Year | Males | $\underset{\text { males }}{\mathrm{Fe}}$ | Rate per 1,000 Male Live Births | $\begin{array}{\|c\|\|} \text { Rate } \\ \text { per } \\ \text { 1,000 } \\ \text { Female } \\ \text { Live } \\ \text { Births } \end{array}$ | Province and Year | Males | Fe males | Rate per <br> 1,000 <br> Male <br> Live <br> Birtbs | Rate per <br> 1.000 <br> Female <br> Live <br> Births |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  |  |  | No. | No. |  |  |
| Newfoundland..... 1951 | 361 | 276 | 60.3 | 48.0 | Quebec. . . . . . . . . 1941 | 3,916 | 2,854 | 85.3 | 65.9 |
| 1961 | 335 | 253 | 41.7 | 33.5 | Qubec........... 1951 | 3,335 | 2,486 | 53.7 | 42.8 |
| 1962 | 327 | 270 | 42.2 | 36.9 | 1961 | 2,464 | 1,855 | 34.7 | 28.0 |
| 1983 | 377 | 215 | 47.3 | 28.7 | 1962 | 2.491 | 1,803 | 35.9 | 27.5 |
| 1964 | 259 | 197 | 35.1 | 27.0 | 1963 | 2.228 | 1.784 | 32.6 | 27.3 |
|  |  |  |  |  | 1984 | 2,060 | 1,527 | 30.6 | 24.1 |
| P. E. Island. ....... ${ }_{1951}^{1941}$ | 102 | 61 30 | 94.6 43.7 | 62.8 23.5 | Ontario........... 1941 | 1,910 | 1,384 | 51.3 | 39.5 |
| 1961 | 55 | 38 | 37.4 | 27.8 | 1991 | 2.010 | 1.535 | 33.9 | 27.6 |
| 1982 | 50 | 37 | 33.2 | 28.4 | 1861 | 2,040 | 1,536 | 25.9 | 20.0 |
| 1968 | 45 | 17 | 30.8 | 11.8 | 1962 | 2,054 | 1,567 | 25.7 | 20.6 |
| 1964 | 50 | 22 | 35.2 | 16.8 | ${ }_{1}^{1963}$ | 1,898 | 1,489 | 25.6 24.1 | 19.7 18.3 |
| Nova Scotis....... 1941 | 545 | 363 | 77.0 | 53.2 |  |  |  |  |  |
| 1961 | 349 | 250 | 38.9 | 30.2 | Manitobs.......... 1941 | 447 <br> 369 | $\begin{aligned} & 341 \\ & 29 \end{aligned}$ | 88.7 35.6 | 47.4 30.2 |
| 1961 | 309 320 | 229 294 | 31.0 32.0 | 24.3 312 | 1961 | 369 341 | 247 | 38.6 28.6 | 30.2 21.7 |
| 1962 | 320 308 | 298 | 32.0 31.4 | 31.2 22.5 | 1962 | 350 | 250 | 29.9 | 22.3 |
| 1983 1964 | 306 263 | 207 | 31.4 28.1 | 22.5 22.4 | 1963 | 810 | 251 | 26.8 | 22.5 |
|  |  | 201 | 28.1 | 22.4 | 1964 | 304 | 251 | 27.2 | 23.8 |
| New Brunswick... ${ }_{1041}$ | 515 | 421 | 83.1 | 69.3 | Saskatchewan. . . . 1941 | 531 | 415 | 56.1 | 46.2 |
| 1951 | 472 | 363 | 57.6 | 46.0 | 1951 | 853 | 323 | 31.8 | 30.4 |
| 1961 | 248 | 188 | 29.1 | 23.0 | 1961 | 373 | 245 | 30.3 | 21.0 |
| 1962 | 272 | 226 | 31.9 | 28.5 | 1962 | 339 | 266 | 28.5 | 23.3 |
| 1963 1964 | 224 | 191 | 28.9 28.4 | 25.1 23.7 | 1963 | 385 | 253 | 31.9 | 22.0 |
| 1964 | 223 | 177 | 28.4 | 23.7 | 1964 | 332 | 257 | 28.6 | 23.2 |

20.-Distribution of Infant Deaths by Province and Sex, 1941-64-concluded

| Province or Territory and Year | Males | $\mathrm{Fe}-$ males | Rate per 1,000 Male Live Births | Rate per 1,000 Female Live Births | Territory and Year | Males | $\underset{\text { males }}{\mathrm{Fe}}$ | $\begin{array}{\|c\|} \text { Rate } \\ \text { per } \\ \text { 1,000 } \\ \text { Male } \\ \text { Live } \\ \text { Births } \end{array}$ | $\begin{array}{\|l} \text { Rate } \\ \text { per } \\ 1,000 \\ \text { Female } \\ \text { Live } \\ \text { Births } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  |  |  | No. | No. |  |  |
| Alberta............ 1941 | 506 | 373 | 57.0 | 44.3 | Northwest |  |  |  |  |
| 1951 | 531 | 358 | 38.6 | 27.0 | Territories...... 1951 | 43 | 27 | 135.6 | 81.3 |
| 1961 | 612 | 432 | 30.8 | 22.7 | 1961 | 73 | 51 | 128.1 | 93.2 |
| 1962 | 565 | 419 | 28.6 | 22.0 | 1962 | 77 | 59 | 131.8 | 107.3 |
| 1963 | 535 | 373 | 27.1 | 19.9 | 1963 | 75 | 46 | 124.4 | 82.4 |
| 1964 | 518 | 347 | 28.0 | 19.7 | 1964 | 52 | 36 | 79.3 | 59.0 |
| British Columbia.. 1941 | 316 | 236 | 41.1 | 32.1 |  |  |  |  |  |
| 1951 | 487 | 352 | 33.8 | 25.8 |  |  |  |  |  |
| 1961 | 534 | 411 | 27.1 | 21.8 |  |  |  |  |  |
| 1962 | 520 | 358 | 26.8 | 19.1 | Canada. . . . . . . . . $1941{ }^{1}$ | 8,788 | 6,448 | 67.0 | 51.9 |
| 1963 | 522 | 357 | 27.3 | 19.5 | 1951 | 8,375 | 6,298 | 42.7 | 34.0 |
| 1964 | 497 | 321 | 27.0 | 18.3 |  | 8,375 | -238 | 42.7 | 34.0 |
| Yukon Territory... 1951 | 10 | 9 | 57.8 | 53.3 | 1961 | 7,447 | 5,493 | 30.5 | 23.7 |
| 1961 | 13 | 10 | 45.8 | 36.5 | 1962 | 7,379 | 5,562 | 30.6 | 24.3 |
| 1962 1963 | 14 | 13 8 | 47.1 32.9 | 52.0 31.3 | 1963 | 7,079 | 5,191 | 29.6 | 22.9 |
| 1964 | 10 | 10 | 37.2 | 40.8 | 1964 | 6,466 | 4,703 | 27.8 | 21.4 |

${ }^{1}$ Excludes Newfoundland and the Yukon and Northwest Territories.


Infant Mortality in Urban Centres.-Because of the relatively small numbers of infant deaths in individual cities and towns, the rates for these centres usually vary widely from year to year. As is evident from Table 2, pp. 238-240, many cities and towns have maintained consistently low rates as compared with the national rate or the rate for the province in which they are situated.

Causes of Infant Deaths.-In 1964 almost 70 p.c. of the infant deaths were caused by immaturity, congenital malformations, pneumonia, postnatal asphyxia and atelectasis, and injury at birth. Immaturity was the underlying cause of 2,159 and was an added complication in 2,828 others. Congenital malformations accounted for 1,969 fatalities, pneumonia for 1,255 , postnatal asphyxia for 1,256 and injury at birth for 1,170. Rates for all these causes decreased in 1964.
21.-Infant Mortality and Rates per 100,000 Live Births, by Cause, 1962-64

| International List No. | Cause of Desth | Numbers of Deaths |  |  | Rates per 100,000 Live Births |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 1962 | 1963 | 1964 | 1962 | 1963 | 1964 |
| 001-019 | Tuberculosis. | 8 | 5 | 3 | 1 | 1 | 1 |
| 020-029 | Syphilis...... | 3 | 3 | - | 1 | 1 |  |
| 045-048 | Dysentery.. | 7 | 1 | 1 | 1 |  |  |
| 050 | Searlet fever. | 19 | 24 |  |  |  | 3 |
| 056 | Whooping cough | 19 | ${ }_{16}^{24}$ | 15 | 4 | 5 | 3 |
| 085 | Measles...... | 34 | 24 | 23 | 7 | 5 | 5 |
| 140-239 | Neoplasms. | 37 | 48 | 45 | 8 | 10 | 10 |
| 273 | Disesses of thymus gland. | 19 | 5 | 12 | 4 | 1 | 3 |
| 325 | Mental deficiency ........ | 65 | 67 | 58 | 14 | 14 | 13 |
| $\begin{array}{r}391 \\ 390\end{array}$ | Meningitis (now-meningococcal) | 94 | 77 | 86 | 20 | 17 | 19 |
| 470-475 | Acute upper respiratory infections. | 45 | 46 | 30 | 10 | 10 | 14 |
| 480-483 | Induenzs.................... | 97 | 100 | 37 | 21 | 21 | 8 |
| 490-493 | Pneumonia (4 weeks and over) | 1,232 | 1,146 | 948 | 262 | 246 | 209 |
| $500-502$ | Bronchitis... | 84 | 45 | 72 | 18 | 10 | 16 |
| 580-573 | Gastritis and duodenitis......... | 9 | \% ${ }^{3}$ | $\stackrel{2}{9}$ |  | 1 |  |
| 560-570 | Herpia and inteatinal obstruction | 97 373 | 108 | 96 208 | 21 | ${ }_{80}^{23}$ | 21 46 |
| 572 | Gastro-enteritis and colitis....... | 373 4 | 372 2 | 208 3 | 79 | 80 | 4 |
| 750-759 | Congenital malformations......... | 2,230 | 2,068 | 1,969 | 475 | 444 | 435 |
| 760, 761 | Injury at birth............. | 1,338 | 1,232 | 1,170 | 285 | 265 | 258 |
| 762 | Pootnatal asphyria and atelectasis. | 1,475 | 1,368 | $1+256$ | 314 | 294 | 277 |
| 763 | Pneumonis of newborn (under 4 weeks) | 408 | 360 | 307 | 87 | 77 | 68 |
| 705-764 | Diarrbess of newborn (under 4 weeks). | 73 | 67 | 57 | 16 | 14 | 13 |
| 765-768 | Other infections of newborn........... | 45 | 50 | ${ }_{91}^{41}$ | 10 | 11 | ${ }^{9}$ |
| 769 | Antenatal toxmmia. | 107 | 87 | 91 | 23 | 19 | 20 |
| 770 | Erytbroblastosis. . . . . . . . . . . . . | 336 | 289 | 251 | 72 | 62 | 55 |
| 771 | Hemorchagie disease of newborn. | 84 | 83 | 93 | 18 | 18 | 21 |
| 772 | Nutritional maladjustment................... | ${ }_{1}^{48}$ | ${ }_{1}^{25}$ | ${ }^{36}$ | 10 | 8 | 238 |
| 774-776 | Il-defined diseases peculiar to early infancy .... | 1,095 | 2,348 | 1,077 2,159 | 4233 | 50 | 238 |
|  | Ill-deGined and unknown causes | 46 | ${ }^{51}$ | 27 | 10 | 11 | 6 |
| E810-E825 | Motor vehicle accidente. . . . . | 17 | 19 | 32 | 4 | 4 |  |
| E900-E904 | Aecidental falls......... | 16 | 13 | 9 | 3 | 3 |  |
| E921 E916 | Accidents caused by fire. ..................... | 31 | 22 | 18 | 7 | 5 |  |
| E924, E925 | Inbalation and ingestion of food or other object. | 313 | 290 | 276 | 67 | 62 | 61 |
|  | Accidental mechanical suffocation............ | 147 | 162 | 158 | 31 | 35 | 35 |
|  | Other accidental and violent deaths. Other specified causes. | 51 473 | 50 417 | 43 379 | 11 101 | 11 90 | 84 |
|  | Totals, All Causes. | 12,341 | 12,270 | 11,169 | 2,755 | 2,634 | 2,466 |

Age at Death.-Of the 11,169 infants who died within a year of their birth, 7,831 , or over 70 p.c., were less than one month old-4,724 during the first day of life, 2,295 from the second to the seventh day, and 812 during the three following weeks.
22.-Infant Deaths, by Age, 1*64

| Time of Death | Number | Percentage | Cumulative |  | Time of Death | Number | Percentage | Camulative |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Number | Percentage |  |  |  | Number | Percentage |
| 1st day ......... | 4.724 | 42.3 | 4,724 | 42.3 | lst month. | 7.831 | 70.1 | 7,831 | 70.1 |
| 2nd ${ }^{\text {an }}$. $\ldots$...... | 903 | 8.1 | 5,627 | 50.4 | 2nd " | 784 | 7.0 | 8,615 | 77.1 |
| 3rd " | 690 | 6.2 | 6,317 | 56.6 | 3rd " $\quad$.... | 590 | 5.3 | 9,205 | 82.4 |
| 4th "' | 282 | 2.5 | 6,599 | 59.1 | 4th " | 552 | 4.9 | 9,757 | 87.4 |
| 5th " | 190 | 1.7 | 6,789 | 60.8 | 5tb " | 349 | 3.1 | 10.106 | 90.5 |
| 6th " | 124 | 1.1 | 6.913 | 61.9 | 6 6th " | 247 | 2.2 | 10,353 | 92.7 |
| 7th " | 106 | 0.9 | 7,019 | 62.8 | 7th | 202 | 1.8 | 10.555 | 94.5 |
|  |  |  |  |  | 8th | 158 | 1.4 | 10,713 | 95.9 |
| 1st week. | 7,019 | 62.8 | 7.019 | 62.8 | 9th " | 143 | 1.3 | 10,856 | 97.2 |
| 2nd | 388 | 3.5 2.1 | 7.407 | 66.3 | 10th " | 107 | 1.0 | 10,963 | 98.2 |
| 3 ra 4th | 193 | 2.1 | 7,641 | 68.4 70.1 | 11th " ${ }_{\text {lith }}$ | 111 | 1.0 | 11,074 11,169 | 99.1 |
|  |  |  |  |  |  |  |  | 11,198 | 100.0 |

Neonatal Mortality.-Deaths occurring within the first four weeks of birth are conventionally referred to as 'neonatal' deaths. Table 22 shows that about 70 p.c. of all infant deaths occur in this hazardous neonatal period and, as would be expected, are caused mainly by conditions associated with pregnancy or delivery. Table 23 gives numbers and rates of neonatal deaths for 1941-64 and the chart on p . 260 compares the major causes of such deaths with all infant deaths from the same causes.
27.-Neonatal Mortality, 1 by Province, 1341-64


[^87]Perinatal Mortality.-'Perinatal' mortality-the combined total of stillbirths and deaths of live-born infants occurring 'around' the natal period-is a relatively new vital statistics concept. Since such deaths frequently have the same underlying causes, associated with pregnancy or delivery, regardless of whether they occur before or after delivery, perinatal deaths are generally considered as including the combined total of stillbirths occurring after at least 28 weeks pregnancy and deaths of live-born infants who fail to survive the first week of life.

In 1964 there were 12,539 such 'deaths', of which 5,520 were stillborn and 7,019 liveborn but failed to survive one week, with a national rate of 27.4 such deaths for every 1,000 total deliveries. This perinatal rate has declined slowly but steadily from 65.2 in 1921 to 27.4 in 1964.

## Subsection 3.-Maternal Mortality

As indicated in Table 1, pp. 236-237, the number of mothers who die in pregnancy and childbirth has been greatly reduced during the past two decades, reaching an all-time low of 137 in 1964. Since 1951 the rate of maternal mortality per 10,000 births has been under 10 and since 1959 it has been under five. Despite this improvement, Canada's maternal death rate ( 3.0 in 1964) is higher than those for several other countries (see p. 276). Mortality among unmarried mothers is higher than among married mothers.

Causes of Maternal Deaths.-Table 24 shows the main causes of maternal deaths during the years 1962-64.
24.-Maternal Mortality and Rates per $\mathbf{1 0 0 , 0 0 0}$ Live Births, by Cause, 1962-64

| International List No. | Cause of Death | Numbers of Deaths |  |  | Rates per 100,000 Live Births |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 1962 | 1963 | 1964 | 1962 | 1963 | 1964 |
|  | Complications of Pregnancy.. | 52 | 43 | 35 | 11 | 9 | 8 |
| 640,641 | Infections of the genito-urinary tract during pregnancy | 3 | 6 | 3 | 1 | 1 | 1 |
| 642 | Toxemias of pregnancy ............................ | 23 | 21 | 17 | 5 | 5 | 4 |
| 645 | Ectopic pregnancy...... | 6 | 8 | 6 | 1 | 2 | 1 |
| 646-649 | Other complications of pregnancy............. | 20 | 8 | 9 | 4 | 2 | 2 |
|  | Abortion.. | 24 | 27 | 22 | 5 | 6 | 5 |
| 650,652 | Abortion without mention of sepsis. | 15 | ${ }^{6}$ | 10 | 2 | 1 | 2 |
| 651 | Abortion with sepsis... | 15 | 21 | 12 | 3 | 5 | 3 |
|  | Complications of Delivery..................... | 78 | 67 | 48 | 17 | 14 | 11 |
| 670 | Delivery complicated by placenta previa or antepartum hæmorrhage. | 21 | 20 | 6 | 4 | 4 | 1 |
| 671 | Delivery complicated by retained placenta... | 3 | 5 | 4 | 1 | 1 | 1 |
| 672 | Delivery complicated by other postpartum hæmorrhage | 21 | 6 | 15 | 4 | 1 | 3 |
| 673,674 | Delivery complicated by abnormality of bony pelvis or malposition of fertus. | 6 | 8 | 5 | 1 | 2 | 1 |
| 675 | Delivery complicated by prolonged labour of other origin. | 5 | 4 | 1 | 1 | 1 | - |
| 676,677 | Delivery with laceration or other trauma...... | 8 | 10 | 11 | 2 | 2 | 2 |
| 678 | Delivery with other complications of childbirth. | 14 | 14 | 6 | 3 | 3 | 1 |
|  | Complications of the Puerperium........... | 37 | 28 | 32 | 8 | 6 | 7 |
| $\begin{aligned} & 680 \\ & 681 \end{aligned}$ | Puerperal urinary infection without other sepsis | $\overline{13}$ | $-$ | $\frac{1}{5}$ |  | 1 | 1 |
| 682-684 | Sepsis of childbirth and the puerperium........ | 13 | 4 | 5 | 3 | 1 | 1 |
|  | monary embolism......................... | 12 | 9 | 13 | 3 | 2 | 3 |
| 685,686 | Puerperal eclampsia and toxæmia. | 11 | 5 | 1 | 2 | 1 | , |
| 687-689 | Other. | 11 | 10 | 12 | 2 | 2 | 3 |
|  | Totals, All Puerperal Causes. | 191 | 165 | 137 | 41 | 35 | 30 |

Of the 137 maternal deaths in the latest year, 35 resulted from complications arising during pregnancy, about half of these from some type of toxæmia; 48 resulted from a complication of delivery, 32 from a post-delivery complication and 22 from abortive delivery. There has been an encouraging drop in maternal deaths caused by toxæmia during the past three or four years.


Age at Death.-Table 25 shows the distribution of maternal deaths by age group; the average age at death is about four years higher than the average age of all mothers at the time of childbirth. While death rates for all age groups of mothers have been declining, there have been rather significant changes in the rates. Formerly, the rate for mothers in the age group 30-34 was twice or three times as high as the rate for the $20-24$ group, but recently mortality rates for the four age groups of mothers under 35 years of age have not been far apart, although after age 35 a sharp rise occurs.

## 25.-Maternal Mortality and Rates per 10,000 Live Births, by Age Group, 1962-64

(Exclusive of Newfoundland)

| Age Group | Maternal Deaths |  |  |  |  |  | Rates per 10,000 Live Births |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1982 |  | 1863 |  | 1964 |  | 1962 | 1963 | 1964 |
|  |  |  |  |  |  |  |  |  |  |
| Onder 20 years.................. | 10 | 5.4 | 5 | 3.2 | 2 | 1.5 | 2.5 | 1.2 | 0.5 |
| 20-24 ${ }^{\text {\% }}$ - | 22 | 11.8 | 23 | 14.6 | 21 | 18.0 | 1.6 | 1.6 | 1.5 |
| 25-29 " | 37 | 19.9 | 33 | 20.9 | 21 | 16.0 | 3.0 | 2.7 | 1.8 |
| 30-34 " | 45 | 24.2 | 34 | 21.5 | 39 | 29.8 | 5.2 | 4.0 | 4.8 |
| 40-44 « ${ }_{\text {4 }}$ | 27 | 14.5 | 20 | 12.7 | 17 | 13.0 | 17.5 | 13.4 | 11.4 |
|  | 4 | 2.2 | - | - | 1 | 0.8 | 38.6 | - | 9.3 |
| 50 years or over.................. | - | $\rightarrow$ | 1 | 0.6 | - | - | - | - |  |
| Totals, All Ages. | 186 | 100.* | 158 | 100.* | 131 | 104.0 | 4.1 | 3.5 | $3 . *$ |
| Average age at death..........yrs. Median age at death! ............ " | $\begin{aligned} & 32.5 \\ & 32.7 \end{aligned}$ |  | $\begin{aligned} & 32.3 \\ & 32.6 \end{aligned}$ |  | 32.432.8 |  | $\cdots$ | $\cdots$ | ** |

${ }^{1}$ The age below and above which hali of the maternal death occurred.

## Section 4.-Natural Increase*

The excess of births over deaths, commonly referred to as natural increase, is a very important factor in the growth of a population. Although the collection of Canadian birth and death statistics began only in 1921, some idea of the rate of natural increase in the early Canadian population may be learned from the estimates shown at the beginning of Sections 2 and 3, which resulted in the following natural increase rates:-

| Intercensal Period | Estimated Average Annual Natural Increase Rate (per 1,000) Population) | Intercensal Period | Estimated Aberage Annual Natural Increose Rote (per 1,000 Populatior) |
| :---: | :---: | :---: | :---: |
| 1851-61. | 23 | 1891-1901.... | 14 |
| 1881-71. | 19 | 1801-11... | 18 |
| 1871-81. | 18 | 1911-21. | 16 |
| 1881-91. | 16 |  |  |

Because of the combination of high birth rates and declining death rates-despite the fact that death rates were still relatively high-the annual rate of natural increase during the late 1800 s and early 1900 s varied between 14 and 23 ; in other terms, the population increased at the rate of 1.5 p.c. to 2.5 p.c. each year by natural increase alone, regardless of any increase attributable to immigration. During the 1920s and early 1930 s the birth rate declined more than the death rate and the natural increase rate dropped to a record low of 9.7 in 1937 But higher birth rates during and after World War II and a gradually declining death rate caused the natural increase rate to rise steadily from 10.9 in 1939 to a record 20.3 in 1954. Although after that year there has been a steady drop because of declining birth rates, the natural increase rate in 1964 was still quite high at 15.9.

Table 1, pp. 236-237, gives average rates of natural increase in the provinces for five-year periods 1941-60 and Table 26 gives the provincial figures for males and females separately for 1941, 1951 and 1961-64. High birth rates and declining death rates have given Newfoundland, Alberta, New Brunswick and Quebec the highest rates of natural increase in Canada in recent years (excluding the Yukon and Northwest Territories).

[^88]26.-Natural Increase and Rates per 1,000 Population, by Sex and Province, 1941, 1951 and $15 \% 1-64$

| Province or Territory and Year | Ercesa of Births Over Deaths | Rate <br> per <br> 1,000 <br> Popa- <br> lation | Males |  | Females |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Number | $\begin{gathered} \text { Rate } \\ \text { per 1,000 } \\ \text { Males } \end{gathered}$ | Number | Rate per 1,000 Females |
| Newfoundland...................... 1951 | 8,734 | 24.2 | 4,369 | 23.6 | 4,365 | 24.8 |
|  | 12,553 | 27.5 | 6,350 | 27.0 | 6,203 | 27.8 |
|  | 11,866 | 25.8 | 5,945 | 24.7 | 5,921 | 25.9 |
|  | 12,260 | 25.5 | 6,130 | 24.9 | 6,130 | 26.2 |
|  | 11.617 | 23.7 | 5,577 | 22.1 | 6,040 | 25.3 |
| Prince Edward Island................ 1941 | 915 | 9.6 | 483 | 9.8 | 432 | 9.4 |
|  | 1,747 | 17.9 | 872 | 17.4 | 875 | 18.2 |
|  | 1,860 | 17.8 | 925 | 17.3 | 935 | 18.2 |
|  | 1,749 | 16.5 | 930 | 17.2 | 819 | 15.8 |
|  | 1,970 | 18.5 | 933 | 17.1 | 1,037 | 19.8 |
|  | 1,746 | 16.3 | 832 | 15.2 | 914 | 17.5 |
| Nova Scotia........................... 1981 | B,989 | 12.1 | 3,335 | 11.3 | 3,654 | 13.0 |
|  | 11.313 | 17.6 | 5,596 | 17.2 | 5,717 | 18.0 |
|  | 13,247 | 18.0 | 6,435 | 17.2 | 6,812 | 18.8 |
|  | 13,090 | 17.5 | 6,417 | 16.9 | 6,673 | 18.2 |
|  | 12.609 | 16.7 | 6,109 | 15.9 | 6,500 | 17.5 |
|  | 11,930 | 15.7 | 5,870 | 11.7 | 6,260 | 16.7 |
| New Brunswick....................... 19411 | 7,088 | 15.5 | 3,396 | 14.5 | 3,692 | 18.5 |
|  | 11,202 | 21.8 | 5,522 | 21.3 | 5.680 | 22.1 |
|  | 11,895 | 19.8 | 5,844 | 19.3 | 6,051 | 20.5 |
|  | 11,679 | 19.2 | 5,802 | 58.9 | 5,877 | 19.6 |
|  | 10,956 | 17.9 | 5,346 | 17.2 | 5,610 | 18.5 |
|  | 10,602 | 17.2 | 5,125 | 16.4 | 5,477 | 18.0 |
|  | 54,871 | 16.5 | 27.501 | $\underline{10.5}$ | 27.310 | 16.5 |
|  | 86,030 | 21.2 | 42,981 | 21.2 | 43,069 | 21.2 |
|  | 100, 130 | 19.1 | 49,741 | 18.9 | 50,389 | 19.2 |
|  | 97, 888 | 18.3 | 48,000 | 17.9 | 49,788 | 18.6 |
|  | 95,423 | 17.4 | 46,675 | 17.1 | 48,748 | 17.8 |
|  | 93,293 | 16.7 | 45,849 | 16.4 | 47,644 | 17.1 |
| Ontario............................. 19911 | 33,036 | 8.7 | 15,705 | 8.2 | 17,331 | 9.3 |
|  | 70,846 | 15.4 | 34, 737 | 15.0 | ${ }^{36,109}$ | 15.8 |
|  | 106,666 | 17.1 | 51,538 | 16.4 | 55,128 | 17.8 |
|  | 103,887 | 16.4 | 50,366 | 15.8 | 53,531 | 17.0 |
|  | 101,472 | 15.8 | 48,927 | 15.1 | 52,545 | 16.4 |
|  | 100,525 | 15.3 | 48,610 | 14.7 | 51,915 | 15.8 |
| Maritoba.............................. 19941 | 8,317 | 11.4 | 3,834 | 10.1 | 4,483 | 12.7 |
|  | 13,207 | 17.0 | 6,388 | 16.2 | 6,819 | 17.9 |
|  | 15,919 | 17.3 | 7,445 | 15.9 | 8,474 | 18.7 |
|  | 15,465 | 16.5 | 7,216 | 15.2 | 8,249 | 17.9 |
|  | 14,823 | 15.6 | 6.929 | 14.4 | 7,894 | 16.8 |
|  | 14,033 | 14,6 | 6,601 | 13.6 | 7,432 | 15.7 |
| Saskatchewan....................... 1941 | 12,006 | 13.4 | 5,651 | 11.8 | 6,355 | 15.2 |
|  | 15,293 | 18.4 | 7,192 | 18.6 | 8,101 | 20.4 |
|  | 16,887 | 18.2 | 7,766 | 16.2 | 9,121 | 20.5 |
|  | 18,337 | 17.6 | 7,500 | 15.6 | 8.837 | 18.7 |
|  | 18,102 | 17.2 | 7,408 | 15.4 | 8,694 | 19.3 |
|  | 15,309 | 16.3 | 7.024 | 14.5 | 8,285 | 18.1 |
| Alberta.............................. 194119.1951 | 10,923 | 13.7 | 5,016 | 11.8 | 5,907 | 16.0 |
|  | 19,836 | 21.2 | 9,331 | 19.0 | 10,505 | 23.5 |
|  | 30,051 | 22.5 | 14,194 | 20.6 | 15,857 | 24.7 |
|  | 29,540 | 21.5 | 13,920 | 19.7 | 15,620 | 23.6 |
|  | 29,023 | 20.7 | [3,834 | 19.1 | 15,189 | 22.3 20.5 |
|  | 26,687 | 18.7 | 12,466 | 16.9 | 14,221 | 20.5 |
| British Columbis................... 1941 | 6,533 | 8.0 | 2,342 | 5.4 | 4,191 | 10.9 |
|  | 16,439 | 14.1 | 7,107 | 11.9 | 9,332 | 16.4 |
|  | 24, 188 | 14.9 | 10.829 | 13.1 |  | 18.7 |
|  | 23,216 | 14.0 | 10.205 | 12.1 | 13, 12.407 | 15.9 14.9 |
|  | 22,449 19,846 | 13.2 | 10,012 8,585 | 11.7 9.8 | 12,407 | 14.9 13.1 |
| Yukon Territory ..................... 1951 | 257 | 28.6 | 115 | 20.9 | 142 | 39.4 |
|  | 464 | 31.7 | 218 | 26.7 | 248 | 38.1 |
|  | 472 | 31.5 | 247 | 29.4 | 225 | 34.1 |

26.-Natural Increase and Rates per 1,000 Population, by Sex and Province, 1941, 1951
and 1961-64-concluded

| Territory and Year |  | Excess of Birtha Over Deaths | Rate per 1.000 Population | Males |  | Females |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Number | Rate per 1.000 Males | Number | Rate per 1,000 Femalea |
| Yukon Territory-concluded. | . 1963 | 418 | 27.9 | 190 | 22.6 | 228 | 34.5 |
| Yab Territa | 1964 | 427 | 26.7 | 210 | 23.9 | 217 | 30.1 |
| Northwest Territaries. | . 1951 | 385 | 22.8 | 164 | 18.2 | 201 | 28.7 |
|  | 1961 | 885 | 37.2 34.4 | 409 403 | 31.9 30.3 | 446 422 | 43.8 39.4 |
|  | 1963 | 895 | 37.3 | 441 | 33.2 | 454 | 42.4 |
|  | 1964 | 1,050 | 42.0 | 529 | 38.6 | 521 | 46.1 |
| Canada. | . $1941{ }^{1}$ | 140,678 | 12.2 | 67,323 | 11.4 | 73,355 | 13.1 |
|  | 1951 | 255,269 | 18.2 | 124,354 | 17.5 | 130,915 | 18.9 |
|  | 1981 | 37,715 | 18.4 | 161,694 | 17.5 | 17\%,021 | 19.2 |
|  | 1962 | 395,994 | 17.6 | 157,011 | 16.7 | 168,983 | 18.4 |
|  | 1963 | 318,404 | 16.8 | 152,964 | 16.0 | 165,436 | 17.7 |
|  | 1964 | 307,065 | 15.3 | 146,878 | 15.1 | 160,187 | 16.8 |

${ }^{1}$ Excludes Newfoundland and the Yukon and Northwest Territories.
The rates of natural increase are higher for females than for males in all provinces because of the higher death rates for males. In the western provinces particularly, the ratio of males to females in the total population is higher than in other parts of Canada and this in itself tends to lower the rate of natural increase. In Canada, a country with a fairly young population and where immigration has been on a large scale, an excess of males is to be expected but the higher rate of natural increase for females may gradually reduce this excess. The trend is toward an eventual excess of females in the total populationas there now is in most European countries-unless immigration again raises the male ratio or death rates among males are greatly reduced.

Natural Increase in Urban Centres.-The classification of births and deaths by place of residence makes it possible to compile the natural increase in the population of urban centres; the figures for centres of over 20,000 population are presented in Table 2, pp. 238-240.

## Section 5.-Marriages and Divorces

## Subsection 1.-Marriages*

In 1964 Canada's crude marriage rate was 7.2 per 1,000 population, an increase over the rate of 6.9 in 1963 which was the lowest since 1934 . Provincial rates in 1964 varied from 6.2 per 1,000 population for Prince Edward Jsland to 7.5 for New Brunswick.

Table 27 gives the number of marriages and the marriage rates for Canada and the provinces for 1941, 1951 and the four consecutive years 1961-64, together with percentages of brides and bridegrooms according to place of birth. For the country as a whole, over 83 p.c. of the bridegrooms of 1964 were born in Canada and 69 p.c. in the province in which they were married; almost 87 p.c. of the brides were born in Canada and 74 p.c. in the province in which they were married. During the postwar years until 1959 an increasing number of marriages were of persons born outside the country, because of the heavy immigration of young persons. However, since 1959 the proportion of foreign-born bridegrooms declined from 19.6 to 16.8 p.c. in 1964 and the proportion of foreign-born brides from 15.9 to 13.6 p.c. There are wide variations in the pattern of intermarriage of foreign-born and native-born persons as between provinces; in the older Atlantic Provinces and in Quebee there is a greater tendency than in the other provinces to marry native Canadians and in these areas both partners are often born in the same province.

[^89]
27.-Marriages and Rates per 1,000 Population, by Province, with Percentage Distribution of Bridegrooms and Brides by Nativity, 1941, 1951 and 1961-64-concluded

| Territory and Year |  | Total Marriages | Rate per 1,000 Population | Born in Province Where Married |  | Born in Other Provinces |  | Born Outside Canada |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Grooms | Brides | Grooms | Brides | Grooms | Brides |
|  |  | No. |  | p.c. | p.c. | p.c. | p.c. | p.c. | p.c. |
| Yukon Territory ...................... 1961 |  | 128 | 8.8 | 12.5 | 24.2 | 63.3 | 52.3 | 24.2 | 23.4 |
|  |  | 109 | 7.3 | 10.1 | 26.6 | 67.0 | 53.2 | 22.9 | 20.2 |
|  |  | 95 | 6.3 | 11.6 | 25.3 | 65.3 | 60.0 | 23.2 | 14.7 |
|  |  | 94 | 5.9 | 11.7 | 19.1 | 64.9 | 62.8 | 23.4 | 18.1 |
| Northwest Territories............... 1961196219631964 |  | 145 | 6.3 | 54.5 | 61.4 | 35.9 | 31.7 | 9.7 | 6.9 |
|  |  | 174 | 7.3 | 60.9 | 66.7 | 27.6 | 26.4 | 11.5 | 6.9 |
|  |  | 139 | 5.8 | 69.1 | 74.1 | 20.1 | 20.1 | 10.8 | 5.8 |
|  |  | 173 | 6.9 | 56.1 | 67.1 | 37.0 | 30.1 | 6.9 | 2.9 |
| Canada ${ }^{\text {a }}$ | 1941 | 121,842 | 10.6 | 76.8 | 81.5 | 11.4 | 10.1 | 11.7 | 8.4 |
|  | 1951 | 128,230 | 9.2 | 70.5 | 76.5 | 15.1 | 12.8 | 14.5 | 10.6 |
|  | 1961 | 128,475 | 7.0 | 67.9 | 74.2 | 14.3 | 11.7 | 17.9 | 14.1 |
|  | 1962 | 129,381 | 7.0 | 69.2 | 75.0 | 14.1 | 11.8 | 16.7 | 13.2 |
|  | 1963 | 131,111 | 6.9 | 69.1 | 75.0 | 14.5 | 11.9 | 16.5 | 13.1 |
|  | 1964 | 138,135 | 7.2 | 68.7 | 74.4 | 14.5 | 11.9 | 16.8 | 13.6 |

${ }^{1}$ Newfoundland included from 1951 and the Yukon and Northwest Territories from 1961.
Age and Marital Status of Brides and Bridegrooms.-Table 28 shows that 91.1 p.c. of the brides and 91.4 p.c. of the grooms in 1964 had never previously married, and that 4.8 p.c. of the brides and 4.2 p.c. of the bridegrooms had been widowed. The average age at marriage of bachelors was 25.4 years and that of spinsters 22.7 years. The average age of widowers and widows at time of remarriage was slightly more than double that of bachelors and spinsters.
28.-Brides and Bridegrooms, by Age and Marital Status, 1964

| Age Group | Brides |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Numbers |  |  |  | Percentages |  |  |  |
|  | Spinsters | Widows | Divorced | Total | Spinsters | Widows | Divorced | Total |
| $12-14$15-years | 90 | - | - 17 |  | 0.133.4 | $\bigcirc$ | 0.3 | 0.130.4 |
|  | 42,01163,035 | 19 |  | 42,047 |  |  |  |  |
| $20-24$ " $\ldots \ldots \ldots \ldots \ldots$ |  | 188 | 740 | 63,963 | 50.1 | 2.8 | 13.1 | 46.3 |
| $25-29$ " $\quad . . \ldots \ldots \ldots .$. | 12,633 | 333 | 1,3171,118 | 14,283 | 10.0 | 5.0 | 23.3 | 10.33.9 |
| $30-34$ " $\ldots \ldots \ldots \ldots .$. | 12,80 3,809 | 393 |  | 5,320 | 1.01.4 | 5.98.0 | 19.8 |  |
| 35-39 " $\quad$ "........... | 1,820 | 534799 | 1,118 | 3,261 |  |  | 16.1 | 2.4 |
| 40 -44 " | 1,029 |  | 703 | 2,531 | 0.8 | 12.0 | 12.5 | 1.81.4 |
| ${ }^{45-49}$ " ${ }^{\text {c }}$ | 569434 | 937944 | 455 | 1,9611,605 | 0.50.3 | 14.114.2 | 8.14.0 |  |
| 50-54 " |  |  |  |  |  |  |  | 1.4 |
| $55-59$ 60 | 215 | 825 | 97 39 | 1,137 | 0.2 | 12.4 | 1.7 | 1.80.80.6 |
| 65 years or over. | $\begin{array}{r} 118 \\ 70 \end{array}$ | $\begin{aligned} & 704 \\ & 980 \end{aligned}$ | 39 24 | $\begin{array}{r} 861 \\ 1,074 \end{array}$ | $\begin{aligned} & 0.1 \\ & 0.1 \end{aligned}$ | $\begin{aligned} & 10.6 \\ & 14.7 \end{aligned}$ | $\begin{aligned} & 0.7 \\ & 0.4 \end{aligned}$ |  |
| Totals, Stated Ages. | 125,833 | 6,656 | 5,644 | 138,133 | 100.0 | 100.0 | 100.0 | 100.0 |
| Age not stated............ | 1 | 1 | - | 2 | ... | $\ldots$ | ... | ... |
| Totals, All Ages....... | 125,834 | 6,657 | 5,644 | 138,135 | 91.1 | 4.8 | 4.1 | 100.0 |
| $\begin{aligned} & \text { Average ages...........yrs. } \\ & \text { Median ages }{ }^{1} \ldots \ldots . . . \end{aligned}$ | 22.7 21.2 | $\begin{aligned} & 50.3 \\ & 50.6 \end{aligned}$ | 34.833.3 | 24.521.5 | $\cdots$ | $\cdots$ | $\cdots$ | $\ldots$ |
|  |  |  |  |  |  |  |  |  |

${ }^{1}$ The ages below and above which half of the marriages occurred.
28.-Brides and Bridegrooms, by Age and Marital Status, 1964-coneluded

| Age Group | Bridearooms |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Numbers |  |  |  | Percentages |  |  |  |
|  | Bachelors | Widowers | Divorced | Total | Bachelors | Widowers | Divorced | Total |
| 15-19 years............. | $\begin{array}{r} 9,073 \\ 69,759 \\ 30,519 \end{array}$ | 136 | 1246 | 9,07570,041 | 7.25.2 | $0 . B$ | $\stackrel{7}{4.1}$ | 6.650.7 |
|  |  |  |  |  |  |  |  |  |
| 25-29 " |  | 129 | 1,054 | 31,702 | 24.2 | 2.2 | 17.4 | 23.0 |
| 30-34 "، | 30,519 9.328 | 234314 | 1,3261,044 | 10,888 | 7.43.0 | 4.0 | 21.9 | 7.9 |
| 35-39 " $\quad$ "............ | 3.742 |  |  |  |  | 5.47.4 | 17.3 | 3.72.2 |
|  | 1,706 | 432 | 910 | 5,100 3,048 | 1.4 |  | 15.1 |  |
|  | 865 546 | 544 | 656 | 2,065 1,673 | 0.7 | 9.4 | 10.9 | 1.5 |
| 55-59 " | 351200 | $885$ | 218 | 1,673 | 0.4 0.3 | 14.2 | 6.6 3.6 | 1.2 |
| 60-64 " |  |  | 12764 | $\begin{aligned} & 1,118 \\ & 2,028 \end{aligned}$ | 0.20.1 | 13.8 | 2.1 | 0.8 |
| 68 years or over........... | 200 181 | $\begin{array}{r} 791 \\ 1,783 \end{array}$ |  |  |  | 30.7 | 1.1 | 1.5 |
| Totals, Stated Ages.. | 126,270 | 5,817 | ¢,045 | 138, $13 \%$ | 100.0 | 145.4 | 190.0 | 104, |
| Age not stated $\qquad$ <br> Totals, All Ages $\qquad$ | 2 | 1 | - | 3 | $\cdots$ | ... | ... | $\cdots$ |
|  | 126,272 | 5,818 | 6,045 | 138,135 | 91.4 | 4.2 | 4.4 | 104.0 |
| Average ages $\qquad$ yrs. <br> Median ages 1 $\qquad$ " | 25.4 | 56.4 | 38.5 | 27.3 | ... | ... | $\cdots$ | $\cdots$ |
|  | 23.8 | 58.0 | 36.9 | 24.2 | ... | ... | ** | $\cdots$ |

${ }^{1}$ The ages below and above which hall of the marriage occurred.
Religious Denominations of Brides and Bridegrooms.-The distribution of brides and bridegrooms by religious denominations is roughly the same as that for the population as a whole. Table 29 shows the very strong influence that religion has on marriage. Nearly 70 p.c. of all marriages are between persons of the same religious denomination; in 1964 among those of Jewish faith it was about 90 p.c.; among Roman Catholics about 87 p.c.; United Church about 59 p.c.; and Eastern Orthodox about 70 p.c.
20.-Marriages by Rellgious Denominations of Contracting Parties, 1564

| Denomination of Bridegroom | Denomination of Bride |  |  |  |  |  |  |  |  |  | Total Marriages | $\begin{gathered} \text { P.C. } \\ \text { of } \\ \text { Grooms } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Anglican | Baptist | $\begin{aligned} & \text { East- } \\ & \text { ern } \\ & \text { Orth- } \\ & \text { cioz } \end{aligned}$ | Jewisb | Lathersn | Pres- <br> byter- <br> ian | Roman Catholie ${ }^{1}$ | United Church | Other Secta | Not Stated |  |  |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |  |
| Anglican.. | 7,776 | 568 | 100 | 22 | 404 | 588 | 2,302 | 3,528 | 640 | 2 | 15,930 | 11.5 |
| Baptist......... | 634 | 2,086 | 22 | 2 | 106 | 171 | 504 | 912 | 283 | - | 4,700 | 3.4 |
| Eastern Orthodox. | 129 | 35 | 1,946 | ${ }^{4}$ | 89 | 81 | 411 | 227 | 66 | 1 | 2, 9,988 | 2.1 |
| Jewish............ | 31 552 | - ${ }^{5}$ | 8 7 | 1,362 7 | 1,902 | [ ${ }^{7} 0$ | 63 808 | 29 t .033 | $\begin{array}{r}34 \\ 336 \\ \hline\end{array}$ | 1 | $\mathbf{1 , 5 4 7}$ $\mathbf{5 , 1 0 2}$ | 1.1 |
| Lutheran.......... | 559 | 126 | 77 19 | 7 | 1,902 130 | 160 1,601 | 908 655 | t. 1,143 | 336 206 208 | 1 | 5,102 4,740 | 3.7 3.4 |
| Roman Catholici.. | 2,284 | ${ }_{4} 45$ | 212 | 25 | 713 | 1,576 | 57.543 | 2.949 | 1.072 | 6 | 65, 837 | 47.7 |
| United Church... | 3,51t | 865 | 161 | 15 | 828 | 974 | 2,978 | 15,341 | 1,070 | 6 | 25,752 | 18.6 |
| Other sects........ | 844 | 344 | 76 | 18 | 352 | 228 | 1,269 | 1,482 | 6,928 | 8 | 11,543 | 8.4 |
| Not stated. | 5 | 3 | - |  | 3 | 2 | 8 | 10 | 7 | 8 | 46 | ... |
| Totals. | 16,548 | 4,6*8 | 2,621 | 1,463 | 4,534 | 4,398 | ¢6,641 | 26,654 | 10,642 | 25 | 138.135 | 160.0 |
| P.C. of brides | 12.0 | 3.4 | 1.9 | 1.1 | 3.3 | 3.1 | 48.2 | 18.3 | 7.7 | ... | 100.0 | $69.8{ }^{2}$ |

1 Includes Greek Catbolic. denomination.
${ }^{2}$ Percentase of marriages between contracting parties of the same religions

## Subsection 2.-Divorces

Before World War I the number of divorces granted in Canada represented less than one per 1,000 of the yearly number of marriages. After that War, however, there was a definite upward trend; the number advanced to 8,213 in 1947, declined gradually to a postwar low of 5,270 in 1951 and since then has again moved sharply upward; the 1965 preliminary figure of 8,941 was the highest on record.

## 34.-Dissolutions of Marriage (Divorces), by Province, 1941-65

Nots.-Figures for individual yeara from 1900 to 1953 are given in the 1956 Year Book, p. 230, and for 1954-61 in the 1965 edition, pp. 263-264.

| Year | Ned. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Av. $1941-45 \ldots \ldots$."_ $1946-50 \ldots \ldots$."1951-55.........." $1956-60 \ldots .$. | Numbers |  |  |  |  |  |  |  |  |  |  |
|  | 5 | 221104 | $\begin{array}{r} 92 \\ 185 \\ 212 \\ 227 \end{array}$ | $\begin{aligned} & 104 \\ & 245 \\ & 167 \\ & 194 \end{aligned}$ | $\begin{array}{r} 99 \\ 303 \\ 327 \\ 403 \end{array}$ | $\begin{aligned} & 1,398 \\ & 2,839 \\ & \mathbf{2 , 4 3 0} \\ & \mathbf{2}, 801 \end{aligned}$ | $\begin{aligned} & 305 \\ & 500 \\ & 356 \\ & 315 \end{aligned}$ | $\begin{aligned} & \hline 207 \\ & 383 \\ & 231 \\ & 247 \end{aligned}$ | 4327247612788 | 9371.6761,4611,514 | $\mathbf{3 . 5 7 6}$$\mathbf{6 , 8 7 7}$$\mathbf{5 , 8 1 1}$$\mathbf{6}, 488$ |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| 1982. | -8 | 8516 | $\begin{aligned} & 229 \\ & 271 \\ & 315 \end{aligned}$ | $\begin{aligned} & 181 \\ & 172 \\ & 210 \\ & 237 \end{aligned}$ | $\begin{aligned} & - \\ & 491 \\ & 834, \\ & 226 \end{aligned}$ | $\begin{aligned} & 3,140 \\ & 3,237 \\ & 3,508 \\ & 4,054 \end{aligned}$ | $\begin{aligned} & 339 \\ & 369 \\ & 418 \\ & 443 \end{aligned}$ | $\begin{aligned} & 281 \\ & 311 \\ & 315 \\ & 312 \end{aligned}$ | 1,0841,2681,3881,348 | 1,4601,5161,5961,961 | 6,76817,68688,6231$8,941^{6}$ |
| 1963. |  |  |  |  |  |  |  |  |  |  |  |
| 1964.... |  |  |  |  |  |  |  |  |  |  |  |
| 1965p. |  |  |  |  |  |  |  |  |  |  |  |

Ratial per 100,000 Popdlation

| Av. 1941- |  | 2.2 | 15.4 | 22.4 | 2.9 | 35.8 | 42.0 | 24.4 | 54.3 | 104.8 | 30.3 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| * 1946-50 |  | 22.1 | 29.7 | 49.3 | 8.0 | 66.4 | 66.8 | 45.9 | 84.6 | 155.8 | 53.0 |
| ${ }^{4}$ 1851-55. | 1.3 | 9.8 | 32.0 | 31.4 | 7.8 | 49.2 | 44.0 | 26.9 | 60.3 | 118.8 | 39.1 |
| - 1950-60. | 1.2 | 4.0 | 32.0 | 33.9 | 8.2 | 48.4 | 35.9 | 27.6 | 65.3 | 99.8 | 38.2 |
| 1982. | $\checkmark$ | 4.7 | 30.7 | 29.8 | - | 49.5 | 36.3 | 30.2 | 79.1 | 89.8 | 36.41 |
| 1963. | 1.7 | 7.5 | 35.8 | 28.0 | 9.0 | 50.2 | 38.8 | 35.5 | 90.2 | 89.4 | 40.72 |
| 1964. | 1.44 | 4.7 | 41.4 | 34.0 | 15.04 | 53.3 | 43.6 | 33.4 | 97.0 | 91.8 | $44.8{ }^{3}$ |
| 1965p. | 0.6 | 14.8 | 42.4 | 38.0 | 4.0 | 60.2 | 46.0 | 32.8 | 92.9 | 109.6 | $45.7{ }^{3}$ |

[^90]
## Section 6.-Canadian Life Tables

Five official series of life tables for Canada and the provinces and regions have been published to date, based on deaths in the three-year period around each of the Censuses of 1931, 1941, 1951, 1956 and 1961. The life table values for 1961 are given in abbreviated form in Table 31.

Life tables give some measure of the bealth and general conditions of survival of an 'artificial' population in a conventional, standard form. A hypothetical number ( 100,000 ) of births of each sex is assumed as a starting point. The life tables show how, on the basis of the mortality rates at each age in the given years, these 100,000 of each sex are reduced in number by death. For example, during the year 1961, of 100,000 males born, 3,058 would have died in their first year, according to the mortality rates in effect during the period $1960-62$, so that $96,9+2$ would survive to one year of age; 179 would have died in their second year so that 96,763 survived to two years of age, and so on. At 100 years of age only 105 of the original 100,000 would have survived. The probability of death at each age is the ratio between the number of deaths and the population at each age. Finally, the expectation of life is the number of years which a person on the average might expect to live if the mortality rates in the given years remained constant throughout his lifetime.

Mortality rates at all ages for males have been almost consistently higher than for females. Males have the highest risk of mortality as compared with females during their first year of life, from their late teens to early 30 and from age 50 to 65 . For both boys and girls the risk of mortality drops rapidly during childhood and is lowest at about age 10, increases gradually to about age 40 for males and about 50 for females and then rises steeply with advancing age. As an illustration of the information available from study of the life tables, it may be observed that at the mortality rates given in the 1961 life table (see Table 31) about 12,100 males would have died before reaching age 50 as compared with about 7,600 females; only 57,517 of the original group of 100,000 males would have survived to age 70 as compared with 72,746 females.
31.-Canadian Life Table, 1961


By 1961, life expectancy at birth in Canada had reaehed a new high point of 68.4 years for males and about 74.2 for females-comparable to the expectancy for other countries of the world with highly developed programs of medical and public health care. Once a child has passed its first year of life, however, its life expectancy increases appreciably. At one year of age a male child at present mortality rishs may, on the average, expect to live an additional 69.5 years and a female almost 75 years, representing for an infant boy a gain of 1.2 years over his expectation at birth and for an infant girl a gain of 0.8 years. The expectation of life of a 15 -year-old boy is 56.2 additional years; of a 15 -year-old girl 61.5 years. At 25 years of age the expectation is about 46.9 years for men and 51.8 years for women and at age $70,10.7$ years for men and 12.6 years for women.

Table 32 summarizes the life expectancy figures extracted from the Canadian life tables for 1931, 1941, 1951, 1956 and 1961. According to these figures, life expectancy at birth for men increased about three quarters of a year between 1956 and 1961 and 1.3 years between 1951 and 1956, compared with 3.4 years from 1941 to 1951 and 2.9 years from 1931 to 1941; females gained one and one quarter years between 1956 and 1961 and 2.1 years between 1951 and 1956, compared with 4.5 years and 4.2 years, respectively, in the preceding decades. Thus, from 1931 to 1961 a total of 8.4 years was added to male life expectancy and 12.1 years to female longevity.

The increases in life expectancy have been predominantly at the younger ages, particularly in infancy, and diminish with advanced age. For example, from 1931 to 1961, 3.5 years were added to the life expectancy of a five-year-old male, 2.5 years to a 20 -year-old, about one year to a 40-year-old and about half a year to a 60 -year-old as compared with 8.4 years for a newborn male. During this period, life expectancy for a five-year-old female gained 8.1 years, for a 20 -year-old 6.9 years, for a 40 -year-old 4.4 years and for a 60 -yearold two and three quarter years as compared with 12.1 years for a newborn female.

Longevity improved for both sexes, though more so and at all ages for females, but there was only slight improvement for males beyond middle life. Briefly, the rapid decline in the death rate for infants of both sexes is continuing but the declines are slower with advancing age, so that relatively stationary death rates were established from about 50 years onward for males and from about 80 years onward for females.

The fact that such a pattern exists is important in interpreting the results of these life tables. The arbitrary population base of 100,000 of each sex in the 1956 tables, for example, was subjected to the mortality rates in effect in $1960-62$, and the life expectancy computed as if those death rates at each age were to prevail during their lifetime. Actually the theoretical 200,000 infants born in $1960-62$ will most probably have a pattern of survival and life expectancy quite different from that of the present life tables as they will spend most of their lives under conditions of public health and medical care which in all likelihood will be superior to those prevailing in 1960-62.

The improvement in life expectancy, particularly among children and adolescents, was caused mainly by the substantial reduction in recent years in mortality from infectious diseases; on the other hand, diseases associated with middle and old age are much less amenable to control. It is therefore unlikely that improvement in life expectancy in the future will be comparable to that of the past 30 years. As approximately 9 p.c. of deaths in 1960-62 occurred among infants and another 77 p.c. among persons over age 50 , any additional improvement must come as the result of further declines in mortality from conditions associated with childbirth and early infancy, further control of infectious diseases, prevention of accidents, and advances in combating diseases associated with middle and old age, such as cardiovascular-rensl conditions and cancer.
32.-Expectation of Life, 1981, 19:1, 1951, 1956 and 1961

| Age | 1931 |  | 1941 |  | 1951 |  | 1956 |  | 1961 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Male | Female | Male | Ferasle | Male | Female | Male | Femsle | Male | Female |
|  | yrs. | yr8 | yra. | yxa. | yrs. | yrs. | yra. | yrs. | yT8. | gra. |
| At | 60.00 | 62.10 | 62.96 | 66.30 | 86.33 | 70.83 | 67.81 | 72.92 | 68.35 | 74.17 |
| 1 year........ | 64.69 | 65.71 | 66.14 | 68.73 | 88.33 | 72.33 | 69.04 | 73.99 | 89.50 | 74.98 |
| 2 years....... | 64.48 | 65. 42 | 65.62 | 68.16 | 67.58 | 71.55 | 68.21 | 73.15 | 68.63 | 74.11 |
| 3 " | 63.84 | 64.75 | 64.88 | 67.38 | 86.68 | 70.66 | 67.21 | 72.24 | 67.71 | 73.18 |
| $4 *$ | 63.11 | 83.99 | 64.07 | 60.56 | 65.79 | 69.74 | 66.38 | 71.31 | 68.78 | 72.23 |
| 5 " | 62.30 | 63.17 | 63.22 | 65.89 | 64.86 | 68.80 | 65.45 | 70.35 | 65.83 | 71.27 |
| 10 " | 57.96 | 58.72 | 58.70 | 61.08 | 60.15 | 64.02 | 60.67 | 65.51 | 01.02 | 68.41 |
| 15 " | 53.41 | 54.75 | 54.06 | 56.36 | 55.39 | 59.19 | 55.85 | 60.64 | 56.20 | 61.51 |
| $20{ }^{4}$ | 49.05 | 49.76 | 49.57 | 51.76 | 50.76 | 54.41 | 51.19 | 55.80 | 31.51 | 56.65 |
| 25 a | 44.83 | 45.54 | 45.18 | 47.26 | 46.20 | 49.67 | 48.61 | 60.97 | 46.91 | 51.80 |
| 30 " | 40.55 | 41.38 | 40.73 | 42.81 | 41.60 | 44.94 | 41.98 | 46.17 | 42.24 | 46.98 |
| 35 " | 36.23 | 37.19 | 36.26 | 38.37 | 37.00 | 40.24 | 37.34 | 41.40 | 37.56 | 42.18 |
| 40 " | 31.98 | 33.02 | 31.87 | 33.99 | 32.45 | 35.88 | 22.74 | 36.69 | 32.96 | 37.45 |
| 45 " | 27.79 | 28.87 | 27.80 | 29.67 | 28.05 | 31.14 | 28.28 | 32.09 | 28.49 | 32.82 |
| 50 " | 23.72 | 24.79 | 23.49 | 25.46 | 23.88 | 26.80 | 24.04 | 27.65 | 24.26 | 28.33 |
| 55 " | 18.88 | 20.84 | 19.64 | 21.42 | 20.02 | 22.81 | 20.12 | 23.38 | 20.30 | 24.01 |
| 60 " | 16.29 | 17.15 | 16.06 | 17.62 | 16.49 | 18.64 | 16.54 | 19.34 | 16.73 | 19.90 |
| $65 *$ | 12.98 | 13.72 | 12.81 | 14.08 | 13.31 | 14.97 | 13.36 | 15.60 | 13.53 | 18.07 |
| $70 \times$ | 10.06 | 10.63 | 9.84 | 10.93 | 10.41 | 11.62 | 10.51 | 12.17 | 10.67 | 12.58 |
| 75 * | 7.57 | 7.88 | 7.48 | 8.19 | 7.89 | 8.73 | 7.98 | 9.15 | 8.21 | 9.48 |
| 80 " | 5.61 | 5.92 | 5.54 | 6.03 | 5.84 | 6.38 | 5.89 | 6.75 | 6.14 | 6.90 |
| 85 " | 4.10 | 4.38 | 4.05 | 4.55 | 4.27 | 4.57 | 4.27 | 4.97 | 4.46 | 4.89 |
| $90{ }^{\prime \prime}$ | 2.97 | 3.24 | 2.93 | 3.12 | 3.10 | 3.24 | 3.07 | 3.67 | 3.16 | 3.39 |
| 96 " | 2.14 | 2.40 | 2.09 | 2.26 | 2.24 | 2.27 | 2.18 | 2.74 | 2.20 | 2.32 |
| 100 " | 1.53 | 1.77 | 1.40 | 1.64 | 1.60 | 1.59 | 1.52 | 2.05 | 1.48 | 1.56 |

Table 33 shows provincial or regional life expectancy for males and females at selected ages. According to the 1961 figures, male life expectancy at birth continues to be below 70 and that for females above 72 in all of the five regions. During the period 1931-61, life expectancy at birth for males increased from 60.00 to 68.35 , or 8.35 years, varying from 6.32 years for the Prairie Provinces to 11.09 years for Quebec; life expectancy at birth for females rose from 62.10 to 74.17 , or 12.07 years, varying from 10.08 years for British Columbia to 14.97 years for Quebec. Quebec showed the greatest improvement of any region among young males and females and middle-aged females, and British Columbia recorded the greatest improvement among middle-aged males.

## 33.-Expectation of Life at Selected Ages, by Province or Region, 1831, 194!, 1851,1856 and 1861


${ }^{2}$ Figares for 1931 and 1941 are exclusive of Newfoundland.

## Section 7--International Comparisons of Vital Statistics

Table 34 gives a summary of Canada's national and provincial vital statistics rates along with those of several other countries. It will be noted that among the countries listed the low crude death rate in Canada is bettered by three countries-Japan, Union of Soviet Socialist Republics and Venezuela-and that some of the provinces have lower rates than most other countries. The birth rate also helps to give Canada one of the fastest growing populations, currently ranking eighth among those listed. However, 12 countries reported lower rates of infant mortality, some as low as 15 per 1,000 live births (Sweden and Netherlands), as compared with Canada's rate of 24.7.

Soorce: United Nations publications.

| Country or Province | Births |  | Deaths |  | Infant Mortality |  | Neonatal Mortality ${ }^{1}$ |  | Maternal Mortality |  | Marriages |  | Natural Increase |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Rate ${ }^{2}$ | Rank | Rate ${ }^{2}$ | Rank | Rute ${ }^{3}$ | Rank | Rate ${ }^{\text {a }}$ | Rank | Rate ${ }^{\text {d }}$ | Rank | Rate ${ }^{\text {a }}$ | Rank | Rate ${ }^{2}$ | Rank |
| Australia. | 20.6 | 15 | 9.0 | 12 | 19.1 | 7 | $14.3{ }^{5}$ | 8 | 2.75 | 6 | 7.7 | 13 | 11.6 | 14 |
| Abgtria.. | 18.6 | 21 | 12.3 | 30 | 29.8 | 21 | 20). 2 | 21 | $6.0{ }^{8}$ | 18 | 8.0 | 9 | 6.3 | 28 |
| Belgium. | 17.1 | 29 | 12.1 | 29 | 27.2 | 18 | $17.6{ }^{\text {b }}$ | 14 | 3.35 | 8 | 6.9 | 24 | 5.0 | 30 |
| Canada... | 23.5 | 8 | 7.6 | 4 | 31.7 | 13 | 17.8 | 13 | 3.0 | 8 | 7.2 | 21 | 15.7 | 5 |
| Newioundland. | 29.9 | ... | 6.2 | $\ldots$ | 31.1 | +.. | 18.9 | ... | 4.1 | ... | 6.9 6.2 | $\cdots$ | 13.7 16.3 | $\cdots$ |
| Prince Edward Island. | 25.5 | ... | 8.2 | $\cdots$ | 26.4 | -* | 15.8 | $\cdots$ | 4.9 | $\cdots$ | 6.2 7.0 | $\cdots$ | 16.3 15.7 | $\cdots$ |
| Nova Scotia....+...... | 24.1 | ... | 8.4 | ** | 25.3 | ** | 16.7 | $\cdots$ | 4.9 | $\cdots$ | 7.0 | $\ldots$ | 15.7 17.2 | $\cdots$ |
| New Brunswick | 24.9 | $\ldots$ | 7.7 6.8 | $\cdots$ | 26.1 | $\cdots$ | 17.6 | $\cdots$ | 6.5 3.8 | $\ldots$ | 7.5 | ... | 16.7 | $\ldots$ |
| Quebea. | 23.5 | $\ldots$ | 6.8 | $\cdots$ | $\stackrel{27.4}{21}$ | $\cdots$ | 15.7 | $\cdots$ | 2.8 | $\cdots$ | 7.4 | ** | 15.3 | * |
| Ontario. | 23.2 | ..* | 7.9 | *** | 21.3 | ** | 16.7 | $\cdots$ | 1.8 | $\cdots$ | 7.1 | $\cdots$ | 14.6 | ** |
| Manitolba. | 22.7 | ... | 8.1 | ... | 25.5 | $\cdots$ | 17.7 | ** | 1.8 | ** | 6.8 | $\cdots$ | 16.3 | $\cdots$ |
| Saskatchewan. | 24.1 | ... | 7.8 | ** | 2\%.0 | . | 17.7 17.0 | $\ldots$ | 2.2 2.2 | $\cdots$ | 6.8 7.4 | $\cdots$ | 18.3 18.7 | $\cdots$ |
| Alberta. | 25.3 | $\ldots$ | 6.6 | . | 23.9 | . $\cdot$ | 17.0 | $\cdots$ | 2.2 0.6 | . | 7.4 7.0 | $\cdots$ | 18.7 | $\cdots$ |
| British Columbia. | 20.7 | ... | 9.2 | ... | 22.8 | ... | 15.3 | $\cdots$ | 0.6 | $\cdots$ | 7.0 | $\cdots$ | 11.5 26.7 | *** |
| Yukon Territory... | 32.1 | ... | 5.4 | $\ldots$ | 38.9 | *** | 17.5 24.5 | +* | - | $\cdots$ | 5.9 6.9 | $\cdots$ | 42.0 | . |
| Nortbweat Territories. | 50.6 | ${ }^{*}{ }^{3}$ | ${ }_{12.6}{ }^{\text {8 }}$ | 28 | 69.5 111.05 | 30 | 24.5 37.3 | 28 | 29.15 | 27 | 6.9 8.85 | 24 | 21.75 | $\cdots$ |
| Denmark. | 33.78 17.6 | 27 | $12.0{ }^{6}$ | 18 | 118.7 | 5 | 14.85 | 98 9 | 23.10 | 3 | 8.4 | 8 | 7.7 | 24 |
| England and Wales | 18.4 | 23 | 11.3 | 25 | 20.0 | 9 | 13.8 | 7 | 2.6 | 5 | 7.8 | 15 | 7.1 | 27 |
| Finland............ | 17.6 | 27 | 9.8 | 13 | 16.9 | 4 | 13.75 | 6 | 5.08 | 15 | 7.5 | 16 | 8.3 | 21 |
| France.......... | 18.1 | 24 | 10.8 | 23 | 23.4 | 11 | 16.0 | 10 | 3.85 | 12 | 7.2 | 21 | 7.3 | 26 |
| Germany, Federal Republic of | 18.5 | 22 | 10.8 | 23 | 25.3 | 15 | 18.9 | 18 | 8.35 | 20 | 8.6 | 6 | 7.7 | 24 |
| Indiat,.......................... | 20.36 | 16 | 8.85 | 7 | 77.65 | 28 |  |  |  |  |  |  | 11.75 | 13 |
| Ireland. | 22.5 | 10 | 11.4 | 26 | 26.8 | 17 | 18.1 | 16 | 4.4 | 14 | 5.8 | 27 | 11.1 | 17 |
| Italy., | 19.9 | 18 | 8.8 | 9 | 35.5 | 23 | 22.96 | 23 | 9.86 | 23 | 8.0 | 9 | 11.1 | 17 |
| Iapan. | 17.7 | 25 | 6.9 | 1 | 20.4 | 10 | 12.4 | 4 | 10.25 | 24 | 9.9 | 2 | 10.8 | 19 |
| Mexico. | 45.4 | 1 | 10.3 | 21 | 67.75 | 26 | $26.8{ }^{7}$ | 25 | $19.3{ }^{\circ}$ | 26 | 7.1 | 23 | 35.1 | 2 |
| Netherlands. | 20.7 | 14 | 7.7 | 5 | 14.8 | 1 | 11.6 | 1 | $3.3^{5}$ | 9 | 8.5 | 7 | 13.0 | 11 |
| New Zealand. | 24.1 | 8 | 8.8 | 9 | 19.1 | 7 | $12.8{ }^{6}$ | 5 | 4.06 | 13 | 8.0 | 9 | 15.3 | 6 |
| Northern Ireland. | 23.6 | 7 | 10.5 | 22 | 28.3 | 16 | 18.3 | 17 | 1.5 | 1 | 7.3 | 20 | 13.1 | 10 |
| Norwey. | 17.7 | 25 | 9.5 | 27 | 16.7 | 3 | $12.0{ }^{6}$ | 2 | 2.05 | 2 | 6.5 | 26 | 8.2 | 23 |
| Peru..... | 27.75 | 4 | 8.36 | 6 | 94.8* | 29 | 35.35 | 27 |  |  | 4.2 | 29 | 19.45 | 4 |
| Portugal. | 23.7 | 6 | 10.2 | 20 | 67.5 | 25 | $26.4{ }^{5}$ | 24 | 8.85 | 21 | 8.0 | 9 | 13.5 | 8 |
| Seotland. | 20.0 | 17 | 11.7 | 27 | 24.0 | 12 | 16.4 | 12 | 2.3 | 4 | 7.7 | 13 | 8.3 | 21 |
| Spain. | 22.2 | 11 | 8.7 | 8 | 29.611 | 22 | 19.210 .4 | 20 | 5.44 | 16 | 7.4 | 19 | 13.5 | 8 |
| Sweden. | 16.0 | 30 | 10.0 | 19 | 15,45 | 2 | $12.3{ }^{3}$ | 3 | 2.76 | 6 | 7.5 | 16 | 6.0 | 29 |
| Switzerland. | 19.2 | 20 | 9.4 | 14 | 19.0 | 6 | $16.1{ }^{18}$ | 11 | 5.76 | 17 | 7.5 | 16 | 9.8 | 20 |
| South Africa (Whiten) | $23.5{ }^{6}$ | 8 | 8.96 | 11 | 29.05 | 19 | 18.9 ${ }^{7}$ | 18 | 6.17 | 19 | 9.16 | 3 | 14.63 | 7 |
| Union of Soviet Socialist Repabli | 19.6 | 19 | 6.8 | 1 | 30.95 | 22 |  |  |  |  | 10.04 | 1 | 12.7 | 12 |
| United States..................... | 21.0 | 12 | 9.4 | 14 | 24.8 | 14 | 17.9 | 15 | 3.3 | 9 | 9.0 | 4 | 11.8 | 14 |
| Venezuela.... | 43.45 | 2 | 7.25 | 3 | $47.9^{6}$ | 24 | 22.85 | 22 | ${ }^{9.56}$ | 22 | 5.85 | 28 | ${ }^{36.25}$ | 11 |
| Yusoalsvia, | 20.8 | 13 | 9.4 | 14 | 78.0 | 2.7 | 33.96 | 28 | 16.04 | 25 | 8.7 | 5 | 11.4 | 16 |



## CHAPTER VI.-PUBLIC HEALTH, WELFARE AND SOCIAL SEGURITY*

## CONSPECTUS

|  | Page |
| :---: | :---: |
| Part I.-Public Health. | 279 |
| Scotion 1 Fedepal Heatir Acotvirese 279 |  |
| Subsection 1. Medicare and the Health Resources Fund, | 279 |
| Subsection 2. National Health Grant Program... | 280 |
| Subsection 3. Hospital Insurance. | 281 |
| Subsection 4. Food and Drug Control. | 285 |
| Subsectioa 5. Medical Services. | 286 |
| Subsection 6. Radiation Protection | 287 |
| Subsection 7. Health Research and International Health. | 288 |
| Subsection 8. Consultative and Technical Services. | 289 |
| Section 2. Provincial and Local Health |  |
| Subsection 1. Provincial Preventive Public Health Services. | 290 |
| Subsection 2, Local Preventive Public Health Services. | 291 |
| Subsection 3. Services for Specific Diseases or Disabilities. | 292 |
| Subaection 4. Public Medical Care. | 293 |
| Subsection 5. Services for the Disabled and Chronically IIL.. | 296 |
| Section 3. Hobpital and Other Health Statistics. | 297 |
| Subsection 1. Hospital Statistics. | 297 |
| Subsection 2. Notifiable Disearea and Other Health Statistics. . . | 305 |
| Subsection 3. Numbers of Physicians and Earnings of Those in Private Practice. | 307 |
| Part II.-Public Welfare and Social |  |
| Section 1. Fedrral Government ProGRAms. |  |
| Subsection 1. Canada Pension Plan. | 309 |
| Subsection 2. Old Age Security | 312 |
| Subsection 3. Famity Allowances. | 312 |
| Subsection 4. Youth Allowances. | 313 |

Page
Section 2. Federal-Provinclal Pro-
GRAMS. . . ..... 314
Subsection 1. Canada Assistance Plan. ..... 314
Subsection 2. Old Age Assistance. ..... 315
Subsection 3. Allowances for Blind Per- sons. ..... 316
Subsection 4. Allowances for Disabled Persons... ..... 317
Subsection 5. Unemployment Assistance. ..... 317
Subsection 6. Fitness and Amateur Sport Program. ..... 318
Subsection 7. National Welfare Grant Program. ....... ..... 319
Subsection 8, Vocational Rehabilitation. ..... 319
Section 3. Provincial Welfare Programs ..... 320
Subsection 1. General Assistance.. ..... 321
Subsection 2. Mothers' Allowances. ..... 321
Subsection 3. Living Accommodation for Elderly Persons. ..... 322
Subsection 4, Child Welfare Services ..... 323
Section 4. International Welfare. ..... 324
Part III.-Health and Social Welfare Ex- penditures ..... 324
Scetion 1. Government Expenditures on Health and Soctal Welfare ..... 324
Section 2. Expenditures on Perbonal Health Care ..... 327
Part IV.-National Voluntary Heatth and Welfare Activities. ..... 328
Part V.-Veterans Services ..... 329
Section 1. Peneiong and Allothanceg. ..... 329
Section 2. Welfare Services. ..... 332
Section 3. Treatment Services. ..... $33 \pm$
Section 4. Land Settlement and House Construction. ..... 335
Section 5. Commonwealth War Gbavee Comidission.... ..... 336

> The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viti of this nolume.

Canada's growth in recent years has intensified many problems in the planning of health and welfare services and has shifted the emphasis toward new approaches and new programs. General prosperity, growing urbanization and industrialization, larger numbers of children and older persons in the population, and new concepts and knowledge in health and welfare matters have all contributed to needs for additional services.

[^91]A number of important developments took place or were under consideration in this area during 1965-66. With the April 1965 Throne Speech, Canada embarked on its "War on Poverty", a program for the full utilization of human resources and the elimination of poverty; planned measures included an expansion of the Area Development Program (ADA) and the Agricultural Rehabilitation and Development Program (ARDA), measures to assist the re-employment, relocation and retraining of workers, urban renewal measures, the establishment of a Company of Young Canadians to undertake projects for economic and social development in Canada and abroad, and the establishment of a Canada Assistance Plan. These measures and related matters were discussed at the federalprovincial conference on poverty and opportunity held in Ottawa in December 1965 and several of them were later formally undertaken.

The first Canadian Conference on Aging, sponsored by the Canadian Welfare Council and held in Toronto in January 1966, sought ways and means of improving the life of older people. Delegates represented labour, management, professional organizations, voluntary organizations and the churches. The report of the Special Committee of the Senate on Aging, released in February 1966, recommended a guaranteed income for older people, improvements in housing, health and institutional care, social services, community participation, recreation programs, and the establishment of a national commission on aging.

The Act to establish the Canada Pension Plan (SC 1964-65, c. 51), which was given Royal Assent on Apr. 3, 1965 and became operational on Jan. 1, 1966, established for the first time in Canada a comprehensive social insurance program of contributory, old age, disability and survivors' pensions. The legislation provides an earnings-related old age pension and adjusts the existing tax-financed flat-rate old age security pension so that the two programs form an integrated system. It also provides a program of supplementary pensions and benefits for disabled contributors and their dependent children, and survivors of contributors.

The Province of Quebec established the Quebec Peasion Plan, which came into operation on Jan. 1, 1966. The Canada Pension Plan does not operate in Quebec because the legislation provides that the plan will not be operative in a province that establishes its own comparable program. It is significant that both the Parliament of Canada and that of Quebee have passed almost identical legislation in this field. The two plans are to be so closely co-ordinated that a person may contribute under one plan or the other, or to both plans interchangeably, during his contributory period and receive the same benefits as if he had contributed to one plan throughout this period. The introduction of the Canada and Quebec Pension Plans emphasized the need for uniform private pension legislation across Canada. Ontario amended the Ontario Pension Benefits Act with effect from July 30, 1965, and in Quebec the Supplemental Pension Plans Act was given Royal Assent on July 15, 1965. Both Acts regulate private pension plans, ensure portability and solvency of the private plans and require the provision of information to the members of the plan.

An amendment to the Old Age Security Act lowered the eligible age, provided for adjustment of the amount of the pension for increases in the cost of living, and eased residence requirements.

The Canada Assistance Act, which was given Royal Assent on July 14, 1966, provides for a comprehensive welfare system to replace the categorical programs of old age assistance, blind and disabled persons' allowances and unemployment assistance; extends existing social assistance and welfare coverage; and substitutes a needs test for a test of means as a qualification for assistance. Provincial programs for persons in need, including health care services, will be financially supported by federal-provincial cost-sharing arrangements.

In the health field, the federal Medical Care Act providing for the setting up of a comprehensive medical care insurance program was given first reading on July 12, 1966; further debate was postponed until October. On Sept. 1, 1965, the British Columbia Medical Plan
took effect and on July 1, 1966 the Ontario Medical Services Insurance Plan and the Alberta Health Program (an extension of the former Alberta Medical Plan) began paying benefits. These three provincial plans are voluntary and involve subsidization of premiums for lowincome groups.

Supplementing the proposed federal medical program, a Health Resources Fund of $\$ 500,000,000$ was provided under the Health Resources Fund Act (SC 1966, c. 42) to assist the provinces in the construction and equipping of facilities for health research and training.

## PART I.-PUBLIC HEALTH

Provincial governments bear the major responsibility for health services in Canada, with the municipality often assuming considerable authority over matters delegated to it by provincial legislation. The Federal Government has jurisdiction over a number of health matters of a national character and provides important financial assistance to provincial health and hospital services. All levels of government are aided and supported by a network of voluntary agencies working in different health fields.

## Section 1.--Federal Health Activities

The Department of National Health and Welfare is the chief federal agency in health matters but important treatment programs are also administered by the Departments of Veterans Affairs and National Defence. The Dominion Bureau of Statistics is responsible for collection, analysis and publication of national health statistics, the Medical Research Council and the Defence Research Board administer medical research programs, and the Canada Department of Agriculture has certain health responsibilities connected with food production.

The Department of National Health and Welfare controls food and drugs, including narcotics, operates quarantine and immigration medical services, carries out international health obligations, and provides health services to Indians, Eskimos and other special groups. It advises on the visual eligibility of applicants for blindness allowances and co-operates with the provinces in the provision of surgical or remedial treatment for recipients of the allowances. Under the Public Works Health Act, supervision of health conditions is provided for persons employed on federal public works. Health counselling and medical supervision are provided for the federal Public Service. The Department also administers the civil aviation medical program for the Department of Transport.

The Department serves the provinces in an advisory and co-ordinating capacity and administers grants to provincial health and national voluntary agencies. Administration of federal aspects of the Hospital Insurance and National Health Grant Programs is a major activity. Co-ordination with the provinces on health matters is facilitated by the Dominion Council of Health, the principal advisory agency to the Minister of National Health and Welfare. Its membership includes the Deputy Minister of National Health, who acts as chairman, the chief health officer of each province, and five appointees of the Governor in Council. The Council meets semi-annually. Federal-provincial technical advisory committees of the Council deal with specific aspects of public health.

## Subsection 1.-Medicare and the Health Resources Fund

Medicare.-Proposals for a plan of comprehensive medical insurance for all Canadians, administered by the provinces and with federal fiscal contributions, were made by the Prime Minister at the federal-provincial conference held in July 1965. The federal contributions would be dependent upon the fulfilment of four criteria by each provincial plan:
(1) that it cover, as a minimum, "all the services provided by physicians, both general practitioners and specialists', except for services available under other legislation and certain limited types of services, such as cosmetic surgery, that are not medically necessary; (2) that it cover all residents, or at least "be aimed at universal coverage", without exclusion because of age, economic circumstances or pre-existing conditions; (3) that it be "publicly administered, either directly by the provincial government or by a provincial government agency"; and (4) that benefits be fully transferable from one province to another. The federal contribution would be half the per capita cost of all insured services in all participating provinces multiplied by the number of insured persons in each participating province. The Medical Care Act embodying these principles was given first reading in the House of Commons on July 12, 1966 and was slated to come before the House again in October.

Health Resources Fund.-Supplementing the medicare program, the Prime Minister also proposed at the July 1965 conference the setting up of a Health Resources Fund "to support the construction and equipment of facilities for health research and training" He later announced that the proposed Fund would amount to $\$ 500,000,000$ to be expended over a 15 -year period commencing in 1966; that, through the Fund, federal capital grants would be available for the construction, renovation and basic equipment of research establishments, teaching hospitals, medical schools and training facilities for other health personnel but that grants would not be available to meet the operating costs of such establishments; and that payments from the Fund would meet 50 p.c. of the cost of construction and basic equipment for the assisted projects.

The operation of the proposed Fund was discussed at the Federal-Provincial Conference of Health Ministers held Jan. 31 and Feb. 1, 1966, when the principle was accepted that, of the $\$ 500,000,000, \$ 25,000,000$ would be provided to the four Atlantic Provinces as special assistance over and above the normal 50 -p.c. share, and that a major portion be allocated on a per capita basis; the allocation of the remainder was left for further study. An advisory committee consisting of representatives of federal and provincial Ministers of Health would, it was intended, review over-all provincial submissions concerning individual projects, advise on disbursements from the Fund, and consult with professional bodies for technical advice. Two technical conferences were held (Oct. 21-22, 1965 and Mar. 31-Apr. 1, 1966) to make preliminary and tentative arrangements for the implementation of the program. On July 11, 1966, the Health Resources Fund Act (SC 1966, c. 42) received Royal Assent.

## Subsection 2.-National Health Grant Program

The National Health Grant Program, inaugurated in 1948, makes federal grants available to the provinces for the developing and strengthening of public health and hospital services. Changes were made over the years to provide additional funds, increase flexibility and meet changing circumstances. Some of the headings under which grants had been made were merged or discontinued and new headings were added (see Table 1).

Up to Mar. 31, 1966, aid for hospital construction had been approved for 122,176 beds and 15,359 bassinets for patients, 23,355 beds for nurses, and 917 beds for interns. Approximately 42,000 health workers had been trained or were undergoing special training, and more than 7,000 health workers were employed, with Health Grant assistance. The amount expended in 1965-66 totalled $\$ 45,477,968$ or 75.3 p.c. of the total available; over the entire 18 years of the program, 79 p.c. of the available money had been actually spent. If for 1965-66 the $\$ 9,500,000$ in fiscal compensation received by Quebec is deducted from the total available, that total is reduced to $\$ 50,880,280$ and the expenditure in the remainder of Canada appears as 89.4 p.c. of the available amount.
1.-Amounts Available and Amounts and Percentages Expended under the National Health Grant Program, by Grant, for the 18-year Period Ended Mar. 31, 1966 and for the Year Ended Mar. 31, 1966.

| Grant | 1948-66 Period |  |  | Year Ended Mar. 31, 1966 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount Availablel | Amount Expended | Percentage <br> Expended | Amount Available: | Amount Expended | Percentage Expended |
|  | \% | \$ |  | \$ | 1 |  |
| Crippled Children². | 6. 207,728 | 4, 431,677 | 71 | - | - |  |
| Professional Training . . . . . . . . . . . . | 17, 191.644 | 15,644,345 | 91 | 1,923,700 | 1,280.025 | 66 |
| Horpital Construction..... | 252,419, 132 | 233,945,344 | 93 | 20,387,320 | 17,622,038 | 86 |
| Mental Health........... | 126,734, 488 | 104, 502,806 | 82 | 8,656, 650 | 5,909, 881 | 68 |
| Tuberculosis Control, | 67,988,582 | 82,979,909 | 93 | 1.923, 700 | 1,719, 316 | 89 |
| Public Health Reseasch | 18,640, 5588 | 16.286, 456 | 87 | 4,424, 510 | 4,214,560 | 95 |
| Health Survery..... | 645, 180 | 540.960 | 84 |  | 10.840 170 |  |
| General Public Health. | 173, 624, 051 | 121,797,929 | 70 | 16,351, 450 | 10,849, 170 | 66 59 |
| Cancer Control. ................. | 62,489,353 | +1,957,713 | 72 | 1,923,700 | 1,132,75i | 59 |
|  | 47,404,300 | 14, 450, 881 | 30 | - | - | - |
| Medical Rebsbilitation ${ }^{\text {. }}$. $\ldots$....... | 6,500,000 | 3,016.750 | 46 | - | - | - |
| Medical Rehabilitation and Crippled Children? | 16,410,550 | 10,512.555 | 64 | 2,885,550 | 1,839, 477 | 64 |
| Cbild and Maternal Health ${ }^{\text {a }}$. | 22,173, 700 | 15,076,033 | 68 | 1,923, 700 | 919,764 | 48 |
| Tetals. | 821,377,582 | 653,289,567 | 79 | 60,380,280 ${ }^{\circ}$ | 45,477,968 ${ }^{\text {9 }}$ | 75 |

[^92]
## Subsection 3.-Hospital Insurance

The federal-provincial hospital insurance program, now established in all provinces and territories, covers 98.7 p.c. of the total population of Canada. This program was introduced under the federal Hospital Insurance and Diagnostic Services Act of 1957, by which the Federal Government shares with the provinces the costs of specified hospital services to insured patients. The choice of methods of financing and administering the program at the provincial level, and the choice of the types of service offered above the minimum atipulated in the Act, rest with the provinces.

Federal legislation covers only services in institutions approved to provide acute, chronic and convalescent care. Tuberculosis and mental hospitals are excluded from the federal-provincial plan, as are institutions providing custodial care. However, the psychiatric and tuberculosis units of generai hospitals are included.

The basic range of in-patient benefits that, under the Act, each province is required to provide includes standard ward accommodation and meals, nursing service, drugs and biologicals, surgical supplies, the use of operating and case rooms, diagnostic procedures (including X-ray and laboratory procedures) together with necessary medical interpretations, and the use of radiotherapy and physiotherapy facilities where available. The same benefits for out-patients, although authorized for assistance under the federal legislation, are not mandatory upon provincial plans. All provinces except one provide, under the plan, iosured out-patient services. The pattern varies from province to province but among the services offered are emergency care following accidents, diagnostic services and therapeutic services, including minor surgical and medical procedures. Some provinces provide certain psychiatric out-patient services.

Provinces use different methods of administering and financing their programs; money raised through general revenues, provincial sales taxes and personal premiums may be used separately or in combination.* The Federal Government pays each province 25 p.c. of the per capita cost of in-patient services in Canada as a whole plus 25 p.c. of the per capita cost of in-patient services in the province, multiplied by the average for the year of the number of insured persons in the province. On a national basis, the federal contribution amounts to about 50 p.c. of sharable costs. However, for individual provinces the proportion of sharable costs met by the Federal Government varies, with a higher proportion of the cost of low-cost programs than of high-cost programs being met. Federal payments to the provinces under the program from July 1, 1958 to Dec. 31, 1965 totalled almost $\$ 2,100,000,000$. During 1965, federal payments to the individual provinces $\dagger$ and territories totalled $\$ 327,000,000$, divided as follows: Newfoundland, $\$ 11,100,000$; Prince Edward Island, $\$ 2,300,000$; Nova Scotia, $\$ 17,200,000$; New Brunswick, $\$ 14,100,000$; Ontario, $\$ 162,200,000$; Manitoba, $\$ 22,100,000$; Saskatchewan, $\$ 24,500,000$; Alberta, $\$ 33,400,000$; British Columbia, $\$ 38,900,000$; Yukon Territory, $\$ 322,000$; and the Northwest Territories, $\$ 75,000$.

Tables 2 and 3 give data for hospitals listed in the federal-provincial hospital insurance agreements. The bulk of the hospitals listed in those agreements are "budget review" hospitals, which are subject to provincial budget-approval. Budget review hospitals include publicly owned general hospitals providing acute or short-term care and special hospitals such as pediatric, maternity, orthopedic and chronic hospitals. Also listed in the agreements are "contract" and federal hospitals. Contract hospitals are private and industrial hospitals that provide insured hospital care at a contractually agreed rate per patient-day.

The 1,295 reporting hospitals, in all three categories listed in the federal-provincial agreements, had a total of 132,623 beds and cribs set up at the end of 1964 , a rate of 6.9 beds per thousand population. Provincial rates ranged from 5.2 in Newfoundland to 8.9 in Alberta, and territorial rates were even higher. The total number of patient-days per thousand population in 1964 also varied considerably from province to province; that for Canada was 2,021.0, considerably lower than those for Saskatchewan and Alberta but much higher than the rate for Newfoundland. In 1964, 90.8 p.c. of all patient-days in hospitals were paid for under the federal-provincial plan.

[^93]2.-Number of Beds and Cribs Set Up in Reporting Hospitals Listed in Hospital Insurance Agreements, with Rate per 1,000 Population, by Province, as at Dec. 31, 1964

| Province | No. of Haspitals Reporting | Beds and Cribs |  | Province or Territory | No. of Hospitals Reporting | Beds and Cribs |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Number | Rate ${ }^{1}$ |  |  | Number | Rate ${ }^{1}$ |
| Newfoundland......... | 46 | 2,542 | 5.2 | Sagkatehewsan. | 156 | 7,937 | 8.4 |
| Prince Edward Island. | 9 | 628 | 5.8 | Alberta. | 160 | 12,804 | 8.9 |
| Nova Scotia. .......... | 48 | 4,537 | 6.0 | British Colnmbis. .... | 111 | 11,555 | 6.6 |
| New Brunswick | 42 | 4,131 | 6.7 | Yukon Territory ...... | ${ }^{5}$ | 152 | 9.5 |
| Quebec. | 269 | 34,408 | 6.2 | Northwest Territories.. | 26 | 486 | 19.4 |
| Manitoba | 104 | 6,992 | 7.3 | Ca | 1,285 | 132,623 | 6.8 |

[^94]3.-Total Patient-Days and Insured Patient-luays in Reporting Eospltals Listed in Hospital Insurance Agreements, with Rates per 1, $0 \boldsymbol{\text { I Total and Insured Population, by Province, }}$ 1564.

| Province or Territory | No. of Hospitals Reporting | Total Patient-Days during Year |  | Insured Patient-Days during Year |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Number | Rate ${ }^{\text {t }}$ | Number | Rate ${ }^{2}$ |
| Newtoundland. | 17 | 696, 430 | 1,418.4 | 647,959 | 1,322.4 |
| Prince Edward Island | 9 | 175.571 | 1,640.8 | 166, 190 | 1,567.8 |
| Novs Scotia. | 48 | 1,301,490 | 1.712 .5 | 1,173.051 | 1,587.3 |
| New Brunswick | 42 | 1,204,638 | 1,952.4 | 1,066,984 | 1,762.0 |
| Quebec. | 269 | 10.382, 542 | 1,880.7 | 9,702,623 | 1,749.5 |
| Ontario. | 319 | 13,966, 164 | 2.129 .6 | 12,542.986 | 1,935.0 |
| Manitoba. | 104 | 2,008,904 | $2,097.0$ | 1,794.648 | 1,938.7 |
| Saskatehewan | 157 | 2,250,575 | $2,386.6$ | 2,135,453 | 2.297 .0 |
| Alberta. | 161 | 3,382,661 | 2.362 .2 | 3.140 .045 | 2,211.3 |
| British Columbia | 111 | 3,414, 103 | 1,964.4 | 2,850,357 | 1,653.3 |
| Yulon Territory. | 5 | 22,520 | 1,407.5 | 18,334 | 1,222.3 |
| Northweat Territories. | 26 | 67,844 | 2,713.8 | 41,676 | 1,667.0 |
| Canada | 1,293 | 38,873,442 | 2,021.4 | 35,284,366 | 1,855.7 |

${ }^{1}$ Per 1,000 total population; based on intercensal population estimates as at June 1, 1964.
${ }^{2}$ Per 1,000 insured persons under provincial plans.

The operating cost of budget review hospitals in Canada in 1964, as shown in Table 4, including items of expense and costs of services not covered under the hospital insurance program, amounted to $\$ 981,662,000$. Salaries and wages accounted for 64.6 p.c. of that total; medical and surgical supplies for 3.1 p.c., drugs for 3.8 p.e., raw food for 5.3 p.c., other departmental supplies and expense for 16.0 p.c., and such items as interest, depreciation and rent for the remaining 7.1 p.c.

In 1964, the total per capita operating cost of budget review hospitals in Canada was $\$ 51.04$, ranging among the ten provinces from $\$ 33.63$ in Newfoundland to $\$ 55.07$ in Ontario. The provincial variations are due in part to differences in the number of patient-days per thousand population and in the range of hospital care that is provided.

## 4.-Revenue Fund Expenditures of Budget Revlew Hospitals, by Type of Account and by Province, 1364

| Province or Territory | Departmental Expenditures |  |  |  |  |  | Total Revenue Fund Expense ${ }^{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Salaries and Wages | Medical and Surgical Supplies | Drugs | $\xrightarrow[\text { Food }]{\text { Raw }}$ | Other Supplies and Expense' | Total Departmental Expense |  |
|  | Amodnts of Expentitures |  |  |  |  |  |  |
|  | \$ | \$ | * | \% | * | 3 | \$ |
| Newfoundland | 8,704,484 | 605,700 | 958,177 | 1,657,897 | 3,523,300 | 15, 149,558 | 16.510, 131 |
| Prince Edward Island. . | 2,238,847 | 130,697 | 156, 816 | 298,665 | 793.087 | 3,615,112 | 3,976,124 |
| Novs Scotia. | 19,810,026 | 1,072,918 | 1,277,491 | 2,187, 880 | 7,253,490 | 31,601,791 | 34,270, 153 |
| New Branswick | 18.147.838 | 1.023, 483 | 1,231,975 | 1,934.937 | $5,675.755$ 426028 | 28,013.985 | 31,220,584 |
| Onebec. | 187, 193, 838 | 11,414,191 | 13,346,280 | 17,829,487 | 60,017.771 | 339,801,567 | 362, 882, 132 |
| Manitobs | 29,557,997 | 1,473,090 | 2,017.267 | 2.358.608 | 6,984, 590 | 42, 391, 552 | 45+201, 540 |
| Saskatchewan | 32,867,441 | 1.586.840 | 1,957,344 | 2,715,406 | 8,143, 352 | 47,270+183 | 50,803,179 |
| Alberta. | 45,270,776 | 2, 190, 115 | $2,539.644$ | 4,531,309 | 10,485,406 | 65, 037, 210 | 72,389.591 |
| British Columbia. | 83, 208,465 | 2.540 .105 | 2,906. 883 | 3,932.918 | 11,685,014 | 74, 273, 385 | 78,878,007 |
| Yakon Territory. | 87,415 150 | 5.931 | 8,112 | 15.416 | 30.447 | 147,321 248,545 | 155.875 |
| Northwest Territories. | 150,261 | 9,426 | 5.520 | 16,107 | 67.231 | 248,545 | 270, 113 |
| Canada. | C31,513,907 | 30,855,715 | 37,673,561 | 51,989,367 | 158,488,241 | 911,726,781 | 981,662,040 |

[^95]
## 4.-Revenue Fund Expenditures of Budget Review Hospitals, by Type of Account and by Province, 1964-concluded

| Province or Territory | Departmental Expenditures |  |  |  |  |  | Total Revenue Fund Expense ${ }^{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Salaries and Wages |  | Drugs | Raw Food | Other Supplies and Expense ${ }^{1}$ | Total Departmental Expense |  |

Expenditures per Patient-Day ${ }^{2}$

|  | \$ | \$ | \$ | \$ | \$ | 8 | \$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Newfoundland. | 13.81 | 0.96 | 1.52 | 2.63 | 5.59 | 24.52 | 26.20 |
| Prince Edward Island. | 12.75 | 0.74 | 0.89 | 1.69 | 4.52 | 20.59 | 22.65 |
| Nova Scotia............ | 16.97 | 0.92 | 1.09 | 1.87 | 6.21 | 27.07 | 29.36 |
| New Brunswick | 16.65 | 0.94 | 1.13 | 1.78 | 5.21 | 25.70 | 28.64 |
| Quebec. . . . . . . . . . . . . . | 21.21 | 1.00 | 1.28 | 1.64 | 4.76 | 29.89 | 32.32 |
| Ontario. | 19.50 | 0.94 | 1.10 | 1.47 | 4.93 | 27.94 | 29.82 |
| Manitoba. | 16.66 | 0.83 | 1.14 | 1.33 | 3.94 | 23.89 | 25.47 |
| Saskatchewan. | 16.72 | 0.81 | 1.00 | 1.38 | 4.14 | 24.04 | 25.84 |
| Alberta. | 15.29 | 0.74 | 0.86 | 1.54 | 3.54 | 21.97 | 24.45 |
| British Columbia. | 18.87 | 0.90 | 1.03 | 1.39 | 4.14 | 26.34 | 27.98 |
| Yukon Territory.. | 28.18 | 1.91 | 2.62 | 4.97 | 9.82 | 47.49 | 50.25 |
| Northwest Territories. | 18.84 | 1.18 | 0.69 | 2.02 | 8.43 | 31.17 | 33.87 |
| Canada. . . . . . . . . | 18.89 | 0.92 | 1.12 | 1.55 | 4.67 | 27.15 | 29.23 |

## Expenditures per Capita4

| Newfoundland. | 17.73 | 1.23 | 1.95 | 3.38 | 7.18 | 31.47 | 33.63 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Prince Edward Island. | 20.92 | 1.22 | 1.46 | 2.77 | 7.41 | 33.79 | 37.16 |
| Nova Scotia. | 26.07 | 1.41 | 1.68 | 2.88 | 9.54 | 41.58 | 45.09 |
| New Brunswick | 29.41 | 1.66 | 2.00 | 3.14 | 9.20 | 45.40 | 50.60 |
| Quebec. | 33.67 | 1.58 | 2.03 | 2.61 | 7.56 | 47.44 | 51.30 |
| Ontario. | 36.01 | 1.73 | 2.03 | 2.71 | 9.11 | 51.59 | 55.07 |
| Manitoba | 30.85 | 1.54 | 2.11 | 2.46 | 7.29 | 44.25 | 47.18 |
| Saskatchewan. | 34.85 | 1.68 | 2.08 | 2.88 | 8.64 | 50.13 | 53.87 |
| Alberta. | 31.61 | 1.53 | 1.77 | 3.18 | 7.32 | 45.42 | 50.55 |
| British Columbia. | 30.61 | 1.46 | 1.67 | 2.26 | 6.72 | 42.73 | 45.38 |
| Yukon Territory. | 5.46 | 0.37 | 0.51 | 0.96 | 1.90 | 9.21 | 9.74 |
| Northwest Territories, | 6.01 | 0.38 | 0.22 | 0.64 | 2.69 | 9.94 | 10.80 |
| Canada. | 32.99 | 1.60 | 1.96 | 2.70 | 8.15 | 47.40 | 51.04 |
|  | Percentage Distribution of Expenditures |  |  |  |  |  |  |
| Newfoundland | 52.7 | 3.7 | 5.8 | 10.0 | 21.3 | 93.6 |  |
| Prince Edward Island. | 56.3 | 3.3 | 3.9 | 7.5 |  |  | 100.0 100.0 |
| Nova Scotia.... | 57.8 | 3.1 | 3.7 | 6.4 | 21.2 | 82.2 | 100.0 |
| New Brunswick. | 58.1 | 3.3 | 3.9 | 6.2 | 18.2 | 89.7 |  |
| Quebec . . | 65.6 | 3.1 | 3.9 | 5.1 | 14.7 16.5 | 92.5 93.7 | 100.0 100.0 |
| Ontario... | 65.4 65.4 | 3.1 3.3 | 3.7 4 | 4.9 5.2 | 16.5 15.5 | 93.7 93.8 | 100.0 |
| Manitoba.............. | 65.4 64.7 | 3.3 3.1 | 4.5 3.9 | 5.2 5.3 | 15.5 16.0 | 93.0 | 100.0 |
| Alberta....... | 62.5 | 3.0 | 3.5 | 6.3 | 14.5 | 89.8 | 100.0 |
| British Columbia. | 67.5 | 3.2 | 3.7 | 5.0 | 14.8 | 94.2 | 100.0 |
| Yukon Territory | 56.1 | 3.8 | 5.2 | 9.9 | 19.5 | 94.5 | 100.0 |
| Northwest Territories. | 55.6 | 3.5 | 2.0 | 6.0 | 24.9 | 92.0 | 100.0 |
| Canada | 64.6 | 3.1 | 3.8 | 5.3 | 16.0 | 92.9 | 100.0 |

[^96]
## Subsection 4.-Food and Drug Control

The provisions of the Food and Drugs Act, administered by the Food and Drug Directorate of the Department of National Health and Welfare, apply to the manufacture, advertising, packaging and sale of foods, drugs, cosmetics and medical devices anywhere in Canada. Wide powers are authorized under this legislation to maintain the safety, purity and quality of food and drug products and to prevent misrepresentation in labelling and advertising. There are prohibitions, for example, on the sale of food or drugs that do not meet prescribed standards, are harmful, adulterated, dirty, improperly stored, or manufactured under unsanitary conditions. The Act also prohibits the advertising of any food, drug, cosmetic or medical device as a preventive or cure for a number of serious diseases and also lists drugs that may be sold only by prescription.

Standards of safety and purity are maintained through constant and widespread inspection and laboratory research. The inspection of food-manufacturing establishments plays a major role in the production of clean, wholesome foods containing ingredients that meet recognized standards. Changing food technology requires the development of methods of laboratory analysis to ensure the safety of new types of ingredients and packaging materials. The Food and Drug Regulations list chemical additives that may be used in foods, the amounts that may be added to each food and the underlying reason. Considerable emphasis is placed upon studies to ensure that the levels of pesticide residues in foods do not constitute a health hazard. The effect of new packaging and processing techniques on the bacteria associated with food spoilage is also of special concern. Since the Act is intended for the protection of consumers, a section of the Directorate obtains consumer opinions, deals with individual consumer complaints and provides information on which consumers can base opinions.

Drug standards are subject to continuous review and testing. Detailed information on all new drugs must be reviewed by the Directorate to determine compliance with requirements before release for sale is permitted. Drug regulations set standards for drug manufacturing, facilities and controls, and prescribe additional safeguards in the distribution of investigational and new drugs. Drug manufacturing requirements relate to sanitation of facilities, employment of qualified personnel, testing to ensure standards of quality and safety at stated stages of processing, maintenance of records of testing performance, together with a system of control to enable a complete and rapid recall of any lot or batch of drugs from the market. The controls over clinical trials and marketing of new drugs require detailed information to be submitted to the Directorate concerning the method of manufacture, the tests applied to establish standards of safety and quality, and substantial evidence of the clinical effectiveness of the new drug for the purposes stated. Samples of the final product must also be submitted. Before carrying out clinical trials, a manufacturer also must file complete data on his experience with the drug including any evidence of adverse side effects, and the qualifications of the persons to be engaged in its investigational use. The Minister may suspend clinical testing based on this evidence if he feels that it is in the public interest to do so; in such case the manufacturer has the right to appeal the decision. Drugs expressly prohibited from sale are thalidomide and lysergic acid diethylamide, except under certain conditions as specified in the regulations, whereby sale by a manufacturer to an institution for clinical use or laboratory research by qualified investigators may be approved by the Minister. Any drug that can be classed as a sedative, hypnotic or tranquillizer is listed to be sold only on prescription. The licensing of persons dealing in certain druge classed as barbiturates and amphetamines is required as well as the keeping of special records and the limitation of their use to medical purposes.

The Food and Drug Directorate administers the Proprietary or Patent liedicine Act, which is concerned with the registration before marketing and the annual licensing of secret-formula medicines sold under proprietary or trade names.

Since early 1965 the Directorate has conducted an adverse-drug-reaction reporting program in 16 teaching hospitals across Canada to recognize and investigate reactions to druga. The co-operation of the medical, dental, veterinary and pharmaceutical pro-
fessions was solicited in advising the Directorate of such reactions in private practice. Close liaison is maintained with the World Health Organization and other authorities in foreign countries for the prompt reporting of such reactions.

Regulation of the supply and use of narcotic druge is carried out under the Narcotic Control Act, as revised in 1961. This legislation prescribes a maximum penalty of seven years with no minimum for illegal possession; a maximum penalty of life imprisonment for trafficking; and minimum and maximum penalties of seven years and life imprisonment, respectively, for illegal export and import. The Royal Canadian Mounted Police and other law-enforcement agencies continue to make every effort to keep the illicit traffic to a minimum.

## Subsection 5.-Medical Services

Through its Medical Services Branch, the Department of National Health and Welfare provides several direct and indirect types of medical service, as described in the following paragraphs. 'Indirect" services are provided by hiring local services where practicable.

Indians and Eskimos.-Medical and public health services are made available to registered Indians or Eskimos who are not included under provincial arrangements and who are unable to provide for themselves. A large volume of the service in treatment and health education is rendered to patients through 84 Departmental out-patient clinics staffed by medical and other public health personnel. In remote areas, the key facility is frequently the Departmental nursing station, a combined emergency treatment and public health unit having two to four beds under the direction of one or two nurses; 43 of these are operated throughout Canada.

Where practicable, there has been an increasing integration of Indians into provincial and municipal health agencies and the number of hospitals and other facilities provided specifically for them have been reduced accordingly. At present, the Department maintains 16 hospitals at strategic points and co-operates elsewhere with community, mission or company hospitals. Indians are included under all provincial prepaid insurance plans for hospital care and other forms of medical care but in almost all cases the total cost of mental and tuberculosis care is borne directly by the Federal Government. Indian and Eskimo health workers are trained to give instruction in health care and sanitation.

Northern Health.-Because of the special problems in developing health services in the Far North, the Department has been given the responsibility of co-ordinating federal and territorial health care for all residents. In so doing, it undertakes the functions of a bealth department for the Council of the Northwest Territories and assists the territorial government of the Yukon Territory to provide certain health services. Close liaison is maintained with the federal departments directly responsible for administrative matters affecting these areas.

In the Yukon Territory, services for the total population administered through the Commissioner for the Yukon and provided on a cost-sharing basis with the Department of National Health and Welfare include complete treatment for tuberculosis, payment for services rendered at the Alberta cancer clinics, mental hospital care through arrangements with the Province of British Columbia, and medical care for indigent patients. Public health nursing services, measures for control of communicable diseases, and administration of the principal public hospital are primarily the responsibility of the Department. Similar services are provided in the Northwest Territories, the costs being shared by the Department of Indian Affairs and Northern Development and the Department of National Health and Welfare. Indigent residents are eligible for medical, dental and optical services as well as for tuberculosis and mental care.

Sick Mariners.-The Department provides compulsory prepaid medical, surgical, hospital and other treatment services to crew members of all foreign-going ships arriving in Canada and Canadian coastal vessels in interprovincial trade, and provides medical,
aurgical and treatment services on an elective basis to crew members of Canadian fishing and government vessels. (Canadian seamen obtain their hospital care under the provincial hospital insurance plans.)

Leprosy--Since 1960, isolation and treatment of persons suffering from leprosy have been arranged in their home neighbourhoods. Under the provisions of the Leprosy Act, facilities for the diagnosis and treatment of leprosy are provided in a six-bed unit of the Hôtel-Dieu Hospital at Tracadie, N.B.

Quarantine.-Under the Quarantine Act, all vessels, aircraft and other conveyances and their crew and passengers arriving in Canada from foreign countries are inspected by the quarantine officers to detect and correct conditions that could lead to the entry into Canada of such diseases as smallpox, cholera, plague, yellow fever, typhus and relapsing fever. Fully organized quarantine stations are located at all major seaports and airports.

Immigration.-Under the Immigration Act and the Department of National Health and Welfare Act, the Immigration Medical Service conducts in Canada and other countries the medical examination of all applicants for immigration to Canada and also provides treatment for certain classes of persons after arrival in Canada, including immigrants who become ill en route to their destination or while awaiting employment.

Public Service Health Counselling.-Health counselling is offered through Medical Services units to federal employees throughout the country. This service is primarily diagnostic and advisory only but emergency treatment can also be given. The Public Service Health Counselling Division also examines civilian aviation personnel and advises on standards of physical fitness required for them.

Aerospace Medicine.-Research on civil aerospace medicine is conducted by the Department in close liaison with the National Research Council, the Defence Research Board and the Royal Canadian Air Force Institute of Aviation Medicine.

Regulation of Hygienic Standards.-The Department is responsible for regulating hygienic standards on federal property, interprovincial common carriers, Canadian shipping and aircraft.

Coast Guard Medical Service.-The Department provides a medical service for and in conjunction with the Canadian Coast Guard.

## Subsection 6.-Radiation Protection

A comprehensive radiation protection program has been developed in Canada in response to the rapidly increasing use of radioactive materials, X-ray equipment and nuclear reactors in medicine, industry and research, and to increasing concern about radiation from atmospheric testing of nuclear weapons, from medical X-ray procedures and from natural sources.

Because of the need for national controls over dealings with uranium and by-product materials, the Federal Government has developed procedures for the safe handling and use of all radioactive materials, implemented through the close collaboration of federal and provincial health departments supported by special advisory committees. Acting under the federal Atomic Energy Control Regulations, the Department of National Health and Welfare reviews all applications for radioisotope licences and recommends health and bafety conditions; it also provides dosimetry services for measuring and recording the personal radiation exposures of workers handling beta-ray, gamma-ray and neutron sources. Licensed establishments are inspected by federal or provincial inspection officers. The Department serves as the co-ordinator for the federal departments and agencies that are capable of providing specialized radiation protection services, particularly in the event of radiation accidents involving possible exposure of members of the public; it also provides
'whole-body counting' and bio-assay facilities for the follow-up of persons who may have ingested or inhaled radioactive contamination. It gives short-term training courses in radiation protection for persons with varying degrees of responsibility for radiation protection on a day-to-day basis. Committees of the Atomic Energy Control Board, including federal and provincial representatives, give special attention to the health and safety problems associated with the siting, design, construction and operation of nuclear reactors and charged-particle accelerators.

Although there is no federal regulatory authority to provide health and safety supervision over the use of X-rays, the Department has established a committee on the development of X-ray safety standards to recommend uniform standards and procedures throughout Canada. Five provinces (Nova Scotia, Quebec, Ontario, Saskatchewan and Alberta) have enacted specific enabling legislation applicable to X-rays and two (Nova Scotia and Saskatchewan) have issued regulations requiring registration of operators and/or equipment. The Department's personnel dosimetry service is available to X-ray workers and its reports are given to the provincial departments of health.

A comprehensive nation-wide monitoring program has been developed to assess the exposure of the public to radiation from radioactive fallout from nuclear-weapons testing. The Department is assisted in the systematic collection of samples of air, precipitation, soil, wheat, milk and human bone by the federal Departments of Transport and Agriculture and pathologists in hospitals throughout Canada. Reports of the concentration of such fallout components as strontium-90 and cesium-137 in these samples are published monthly. Because of a unique food-chain cycle in the Far North, a study of cesium-137 in the North is included in the nation-wide program, under which measurements are made of cesium-137 in caribou and reindeer meat and in hurnan urine. In addition, direct measurements of cesium-137 levels in living persons are made using portable and fixed 'whole-body counters'

## Subsection 7.-Health Research and International Health

Health Research.-Health research in Canada is carried on in universities, hospitals, research institutions and government departments. The main sources of financial support are governments, voluntary agencies, charitable foundations, professional bodies and business corporations.

The Federal Government conducts medical and dental research (intramural research) in the Department of National Health and Welfare and the Defence Research Board. The Medical Research Council, the National Research Council, the Department of National Health and Welfare, the Department of National Defence, the Department of Veterans Affairs, and the Queen Elizabeth II Fund all give financial support to research in universities, hospitals and other institutions (extramural research).

The Medical Research Council, formed in 1960 from the National Research Council's former Division of Medical Research (see p. 149), is the principal federal health-research advisory and co-ordinating agency. Its primary concern is the support of fundamental research in the basic medical sciences. It administers most of the federal medical research grants that support full-time investigation by research scientists in Canadian medical schools and their affiliated hospitals. The National Research Council pursues in its broad program many investigations relevant to health. Its Associate Committee on Dental Research administers specific grants for dental research and for training dental-research personnel.

The Department of National Health and Welfare supports both extramural and intramural health research, mainly of an applied nature. Intramural research is carried on by the Food and Drug Directorate, the Medical Services Directorate, the Health Insurance and Resources Branch, by several divisions and laboratories of the Health Services Branch, and by the Research and Statistics Division. The Department's extramural research program is composed of public health research, surveys and studies that have the prior approval of the provinces for assistance under the National Health Grant Program (see p. 280).

Assisted projects mainly fall into one of the following areas: prevention of disease and disability; operational or administrative research on health programs and services; epidemiological studies; or environmental health, sanitation and public health engineering.

The Defence Research Board sponsors both intramural and extramural research on medical problems of defence interest (see Chap. XXVI, Sect. 1, Subsect. 4). In addition, a special unit to conduct research in aviation medicine is in operation at McGill University. The Department of Veterans Affairs maintains a program of medical research in its hospitals and clinics across Canada, mainly dealing with conditions affecting aging, such ;as arthritis and arteriosclerosis (see also p. 334). The Queen Elizabeth II Fund for Research in the Diseases of Children, established by the Federal Government in 1959, makes a fixed annual sum available for training researchers and scientists in children's diseases.

International Health.-Canada actively assists and co-operates with the World Health Organization (WHO) and the other specialized agencies of the United Nations whose programs have a substantial health component or orientation. Capital and technical assistance are provided to developing countries through the Colombo Plan and other bilateral aid programs. Health training is provided for a number of persons coming to Canada each year under the different technical co-operation schemes (see p. 171 and pp. 178-181); during 1965, 112 trainees arrived, bringing the total number of trainees in Canada during the year to 282 . These persons were working in a wide range of health disciplines under the External Aid Program but with greatest, concentration in undergraduate medicine and in public health and nursing specialties.

Canadian experts in health legislation, health administration and related areas undertook specific assignments abroad during the year and teachers and specialists in a number of clinical fields were provided in response to requests from the developing countries. Capital assistance, primarily through the provision of cobalt beam therapy units for cancer treatment centres in the Colombo Plan area, was continued.

Canada concluded its membership on the Executive Board of the WHO in May 1965 but its term of office on the Executive Board of UNICEF was renewed at the beginning of the year. The Deputy Minister of National Welfare, Canada's representative on the Board, was elected Chairman for the period commencing February 1966 through July 1968.

To carry out Canada's obligations under the International Sanitary Conventions, the Department of National Health and Welfare maintains quarantine measures for ships and aircraft entering Canadian ports and provides accommodation and necessary medical care for persons arriving in Canada who require quarantine (see p. 287).

The Department is responsible for the enforcement of regulations governing the handling and shipping of shellfish under the International Shellfish Agreement between Canada and the United States and, at the request of the International Joint Commission, participates in studies connected with control of pollution of boundary waters between Canada and the United States as well as with problems caused by atmospheric pollution. Other international health responsibilities include the custody and distribution of biological, vitamin and hormone standards for WHO and certain duties in connection with the Single Convention on Narcotic Drugs, 1961, as well as Canada's representation on the Narcotic Commission of the United Nations.

## Subsection 8.-Consultative and Technical Services

The extension of technical and consultative assistance to the provinces is a function of the Health Branch of the Department of National Health and Welfare. The following specialized services supply consultation and information, advise on health care projects, co-ordinate activities and planning, and exercise leadership in promoting high standards of service: Aerospace Medicine and Safety; Child and Maternal Health; Dental Health; Emergency Health; Epidemiology; Health Education; Laboratory of Hygiene; Medical Rehabilitation; Mental Health; Nursing; Nutrition; Occupational Health; Plaaning and

Evaluation; Public Health Engineering; Research Development; Health Grants; Health Resources; Hospital Insurance and Diagnostic Services; Health Facilities Design; Medical Care; and Research and Statistics.

## Section 2.-Provincial and Local Health Services

Provincial and local health services may be grouped into several broad categories: provincial preventive public health services; local preventive public health services; services for specific diseases or disabilities combining prevention and treatment; services related to general medical and hospital care; and services for disabled and chronically ill persons.

Provincial and local governments co-operate closely in providing community public health services. The autonomy of the provinces and their social, economic and geographic diversity make for some variety in legislative provisions, in financial arrangements and in the detailed division of functions between provincial health departments and local and voluntary agencies. Each province, however, offers all or nearly all of a basic range of public health services, which includes environmental health, occupational health, communicable disease control, maternal and child health, dental health, nutrition, health education and public health laboratories.

## Subsection 1.-Provincial Preventive Public Health Services

Environmental Health.-The control of factors in the environment that are harmful to physical health is a rapidly expanding area of public health activity. Much of the work in community sanitation involves traditional inspection duties essential to the maintenance of pure milk, water and food supplies, disposal systems and provision of sanitary conditions in public areas. Increasing industrialization and urbanization, however, have both magnified the old problems and imposed new responsibilities. Air pollution, water pollution, radiation exposure and the use of pesticides are emerging as major environmental problems, necessitating the co-operative efforts of governments and other agencies in research and in planning effective control measures.

Occupational Health.-Services designed to prevent accidents and occupational diseases and to maintain the health of employees are the common concern of provincial health departments, labour departments, workmen's compensation boards and industry management. Provincial agencies regulate working conditions and offer consultant and educational services to industry. All provinces have legislation (Factory Acts, Shop Acts, Mines Acts, Workmen's Compensation Acts) setting health safety standards for employment.*

Communicable Disease Control.-There are separate divisions of epidemiology or commumicable disease control in six provinces; in the other provinces these functions are bandled by other provincial medical consultants. Local health authorities undertake casefinding and diagnostic services in co-operation with public health laboratories, carry out epidemiological investigations and often participate in tuberculosis and venereal disease control measures. All provincial health departments organize immunization programs for the public against diphtheria, tetanus, poliomyelitis, whooping cough and smalipox. Through agreement with the Federal Government, live oral poliovirus vaccine (Sabin) as well as Salk vaccine is made available by provincial health departments for immunization against poliomyelitis. Other agents such as gamma globulin may be provided under certain conditions for protection against measles and infectious hepatitis.

Maternal and Child Health.-Most provincial health departments have maternal and child health divisions under medical direction or have made other administrative arrangements to provide consultant services in this field. In addition, six of the provinces

[^97]have consultant pursing services within these divisions. Provincial divisions provide advisory services to local health departments and to hospitals, conduct studies of local problems and needs, and assist in the training of health personnel.

Dental Health.-All provincial health departments have dental health divisions that administer programs varying under local conditions but directed mainly to the training of dentists and dental hygienists in public health, the operation of children's preventive and treatment clinics, and health education. Water fluoridation projects involving 4,324,000 people are in operation in eigbt provinces and in the Northwest Territories. Four provinces - Alberta, Manitoba, Ontario and Nova Scotia-have set up, in conjunction with their dental schools, special courses for dental hygienists. In all ten provinces clinical care is provided for children in remote rural areas. A locally sponsored plan in which the cost of dental services for children is shared by the community and the provincial health department is in operation in more than 90 communities in British Columbia.

Nutrition.-Services include technical guidance, education, consultation and research. In some provinces, school lunch programs are sponsored and dietary supplements distributed. Five provinces have special nutrition divisions; in other provinces, consultants in nutrition function under a broader grouping of departmental services.

Health Education.-A basic concern of provincial health authorities is to stimulate public interest in important health needs, and most provincial health departments have a division of health education directed by a full-time professional 'health educator' The division may also provide consultative services to the management of the department, to local health authorities and to voluntary associations.

Public Health Laboratories.-The public health laboratory was one of the earliest provincial services developed to assist local public health departments in the protection of community health and the control of infectious diseases. Public health bacteriology (testing of milk, water and food), diagnostic bacteriology and pathology are the principal functions of the laboratory service, with medical testing for physicians and hospitals steadily increasing in volume. Efforts to co-ordinate public health and hospital laboratory services and measures to bring laboratory facilities to rural areas are among the recent developments.

## Subsection 2.-Local Preventive Public Health Services

Local health authorities are responsible generally for the administration and enforcement of local regulations and by-laws relating to health and for the direct provision of various preventive health services. The scope of these services varies greatly in different areas and provinces but basic programs are similar, covering environmental sanitation, communicable disease control, child, maternal and school health, health education and vital statistics. Vital statistics are collected locally and information is used to analyse and plan public health activities. Among other services provided locally by some health units or departments are mental health, occupational health, community nutrition, and preventive dental health. Increasing attention is being directed toward measures designed to control the chronic diseases, to extend the period of active life, and to provide adequate public health protection for the aging segment of the population.

Health Units.-Full-time local public health services under the direction of full-time medical health officers have been developed partly through municipal health departmente, partly through joint provincial-local health units, and partly through provincial health districts. City health departments are administered and financed directly by the municipality concerned, usually through a municipal board of health. Local health units are designed primarily for rural areas with staff serving county or other combinations of local government jurisdictions, and financial and administrative responsibility shared between provincial and local authorities; although the division of responsibility variea among prov-
inces, the trend is toward an increasing degree of provincial control. In some provinces (in the Atlantic Provinces particularly) provincially administered local health districts provide services without administrative participation by local citizens.

At the end of 1965, full-time local public health services were supplied through 34 urban health departments covering $6,400,000$ persons and 190 local health units covering $10,700,000$ persons. The total number of full-time health departments, units and districts had increased to 224 from 157 in 1948 . The basic staff of an urban health department or local heaith unit usually comprises a medical officer of health, some public health nurses, and sanitation inspectors. To a great extent, the services provided depend upon having a sufficient number of qualified persons employed by the agency. Total full-time staff employed by local agencies at the end of 1965 numbered 5,896 , of whom 2,674 were in urban health departments and 3,222 in local health units. Many areas not requiring full-time services of health personnel employ part-time personnel but more often these services are provided directly to the local area by the provincial health department. In addition, provinces are responsibie for providing local health services in municipally unorganized territories.

## Subsection 3.-Services for Specific Diseases or Disabilities

Mental Health.- Treatment programs for the mentally ill have centred mainly around three types of facilities: the mental hospital, the psychiatric unit in the general hospital and the organized community mental health clinic. These facilities, however, no longer have separate and distinct functions. New emphasis on the role of the commanity and its resources in the treatment and rehabilitation of the mentally ill is affecting the whole program of in-patient care. Utilizing the basic clinical facilities of general hospitals and mental hospitals, the community program is extending its scope and usefulness through the provision of day-care centres, sheltered workshops, half-way houses, and foster home and boarding home care. Most of the large general hospitals in Canada have organized psychiatric units, providing bed accommodation for short-stay patients. Further planning in community-based services concerns the development of small regional psychiatric hospitals from which a comprehensive community program will emanate. Examples of this type are the 150 -bed hospital in Yorkton, Sask., a 68 -bed psychiatric hospital in Selkirk, Man., and the developing community facilities for in-patient, out-patient and day care in several Ontario cities, including Ottawa, Sudbury and Windsor. The Atlantie Provinces, Quebec and the western provinces are all developing new facilities and strengthening existing ones.

Special centres for the assessment and diagnostic evaluation of mentally retarded children are also being developed. Day-training schools or classes for the trainable retarded, sponsored by local associations of parent groups forming the Canadian Association for Retarded Children, are organized throughout the Iand and research programs designed to afford better understanding and management of mental retardation problems are being developed and expanded in all provinces.

Most public mental hospitals provide care and treatment for all types of mental illness. New programs of recreational and industrial therapy and enlarged and modernized clinical and surgical facilities are examples of widespread improvements in mental hospital care that particularly benefit patients undergoing active treatment. More recently, planning has been undertaken to reassess the status of the long-term chronically ill patient. Since 1961 new legislation governing the admission and care of the mentally ill has been enacted in six provinces-Nova Scotia, Ontario, Saskatchewan, Alberta, Manitoba and British Columbia-designed to promote easier and more informal methods of admission and discharge and to establish machinery guaranteeing periodic review of the medical certification of long-term patients.

A great part of the cost of care in mental hospitals is borne by the provincial governments, although a charge, according to ability to contribute, may be made in some provinces. Newfoundland and Saskatchewan provide complete free care; Manitoba covers minimum
maintenance costs for all patients; in Nova Scotia the provincial hospital gives free care to patients requiring active treatment; and in Ontario mental-institution treatment is included in the hospital care insurance plan.

Tuberculosis.-The fight against tuberculosis is one of the major programs of all health departments. Free hospitalization and free drug treatment, both on an in-patient and domiciliary basis, are provided. In two provinces extensive BCG programs are in effect and in the other provinces this prophylactic is provided to groups at special risk. Casefinding programs in the form of community tuberculin and X-ray surveys, surveys of high risk groups, and the follow-up of all arrested tuberculosis cases are routine. These activities have resulted in a decline in the Canadian tuberculosis death rate of 85 p.e. since 1951; in 1965 the rate was 3.6 per 100,000 population. The number of beds set up in public sanatoria declined from a peak of 18,977 in 1953 to 6,462 in 1965.

Cancer.-Health departments and lay and professional groups working for the control of cancer have been concerned mainly with four aspects of the problem-diagnosis, treatment, research and public education. In cancer detection and treatment, specialized medicine, hospital services and an expanding public health program are closely related. There are programs operating under health departments in four provinces; four others have provincially supported cancer agencies or commissions. These sponsor the work of diagnosis and treatment in special clinics, located usually within the larger general hospitals. Under the provincial hospital insurance plans, the benefits pertaining to in-patient care in the treatment of cancer are essentially similar in ten provinces and include such special services as diagnostic radiology, laboratory tests and radiotherapy. Similar services for out-patients are covered either by hospital insurance or by federal-provincial cancer control grants. Comprehensive free medical programs for cancer patients are in operation in Saskatchewan and Alberta and for cancer in-patients in New Brunswick.

Venereal Disease.-Free diagnostic and treatment services are available in all provinces but the operation of government clinics is being increasingly superseded by the method of supplying free drugs to private physicians who are reimbursed for treatment of indigents on a fee-for-service basis.

Alcoholism.-Ontario, Manitoba, Alberta and British Columbia carry out research and education programs and operate centres for treatment, supported largely by public funds. Ontario, Saskatchewan and Alberta also have rehabilitation programs for alcoholic inmates of reform institutions. Legislation in Newfoundland, New Brunswick, Nova Scotis and Quebec authorizes the setting up of similar agencies to initiate research and education studies in those provinces.

Other Diseases or Disabilities.-Services for persons with chronic disabilities, such as heart disease, arthritis, diabetes, visual and auditory impairments and paraplegia have been developed largely by voluntary agencies assisted by federal and provincial funds. (See also pp. 296-297.)

## Subsection 4.-Public Medical Care

Province-wide medical care insurance programs are operating in Saskatchewan, Alberta, British Columbia, Ontario and Newfoundland, with differences in the degree and extent of coverage and in benefits provided. In addition, most of the provinces have programs for public assistance recipients. In the present context, public medical care is grouped into four broad categories: provibcial universal-coverage medical care programs; provincially sponsored or assisted medical care programs; provincial programs for public assistance recipients; and provincial programs for other selected groups.

Provincial Universal-Coverage Medical Care Programs.-Saskatchewan is the only province having a universal-coverage medical care program. Since July 1962, every person who has resided in Saskatchewan for three months (and is not entitled to receive
medical services under other programs) and has paid, or has had paid on his behalf, the required premium is entitled to have payment made on his behalf from the Medical Care Insurance Fund for medical, surgical and obstetrical care, without limit, in his home, in the doctor's office and in hospital, from his physician-of-choice (including payment at specialists' rates for referred specialists' services). There are no restrictions relating to age or pre-existing conditions. Physicians may elect to receive payment in a number of ways; usually either they choose to receive direct payment from the Medical Care Insurance Commission at 85 p.c. of the 1959 Schedule of Minimum Fees of the College of Physicians and Surgeons of Saskatchewan (as amended) as payment in full, or their patients enrol voluntarily with an approved health agency, which pays the physician an amount equal to the amount paid to the agency by the Commission in respect of the physician's assessed account. In 1965 , annual premiums of $\$ 12$ for a single person and $\$ 24$ for families accounted for 25 p.c. and general revenue contributions for 73 p.c. of the Commission's total receipts. There were more than 887,000 persons covered by the Saskatchewan Medical Care Insurance Act at the end of June 1965, or about 93 p.c. of the provincial population. Most of those not covered were protected under other public programs, federal or provincial.

Provincially Sponsored or Assisted Medical Care Programs.-Three provincesAlberta, British Columbia and Ontario-have established provincially assisted voluntary medical care programs.

The Alberta Medical Plan, which became effective Oct. 1, 1963, is designed to belp residents with low incomes who voluntarily purchase medical care insurance from approved non-profit and commercial agencies. The approved carriers must make available to all residents a program of insurance that provides the attendance of physicians in home, office or hospital, as well as surgical, specialist and general diagnostic services. Maximum premium rates set by the province must not be exceeded. The Plan is financed completely from personal premiums but there is provision for government subsidization of the premium costs of low-income persons to the extent of 80 p.c. for persons with no taxable income, 50 p.c. for persons with taxable income from $\$ 1$ to $\$ 500$, and 25 p.c. for persons with taxable income from $\$ 501$ to $\$ 1,000$. All residents may insure for medical services either through the doctor-sponsored Medical Services (Alberta) Incorporated or through approved agencies; doctors are reimbursed at 90 p.e. of their assessed fees by the former or at 100 p.c. by the latter. In October 1965, an estimated 850,000 persons were covered by the Plan, or 59 p.c. of the provincial population. Of these, about 187,000 , or 13 p.c. of the provincial population, were covered by subsidized insurance contracts.

On July 1, 1966 the Alberta Health Program came into effect; it comprises the Alberta Medical Plan and the new Extended Health Benefits Plan. The latter makes available, through approved companies and with premium-subsidy rates equal to those under the Alberta Medical Plan, insurance for many additional health services, including prescribed drugs, optometry, physiotherapy, psychology, ambulance, osteopathy, chiropractic, podiatry, naturopathy, and various medical supplies and appliances. A deductible amount and a co-insurance charge or limited liability on some services apply to the new Plan.

The British Columbia Medical Plan took effect Sept. 1, 1965. The Plan, an agency directed by representatives of the government and the medical profession, makes available to all provincial residents insurance that provides most physician's services, as well as limited physiotherapy, special nursing, chiropractic and naturopathic services. To persons resident in the province for the preceding 12 months, the goverament offers subsidies of 90 p.c. of the premium for those with no taxable income and of 50 p.c. for those with taxable income from $\$ 1$ to $\$ 1,000$. Annual premiums are $\$ 60$ for a single person, $\$ 120$ for a family of two, and $\$ 150$ for a family of three or more persons. The government pays $\$ 2,000,000$ annually to a Medical Grant Stabilization Fund in order to cover any deficit. In February 1966, more than 198,000 persons were covered under the Plan and 67 p.c. of the insurance contracts were subsidized.

The Ontario Medical Services Insurance Plan began paying benefits July 1, 1966. The Plan offers to all Ontario residents insurance that covers most physician's services.

Subsidies are available to certain persons resident in the province for the previous 12 months. The government will pay the full premium of applicants who had no taxable income during the preceding year and of recipients of public assistance, and it will pay 50 p.c. of the premium for single applicants who had taxable income in the preceding year of $\$ 500$ or less, for married applicants with one dependant whose taxable income in the preceding year was $\$ 1,000$ or less, and for married applicants with two or more dependants whose taxable income was $\$ 1,300$ or less. Premiums have been set at $\$ 60$ for a single person, $\$ 120$ for a family of two, and $\$ 150$ for a family of three or more. The Plan is administered by the Department of Health and a Medical Services Insurance Council, representing the public and the medical profession, advises the Minister on its operationt:

Programs for Public Assistance Recipients.-For several years, Nova Scotia, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia have operated programs providing certain personal health care services for specified categories of welfare recipients. In 1966, Quebec commenced a program providing comprehensive physician's services to recipients of public assistance. Medical care benefits for recipients of assistance in Saskatchewan and Ontario are now administered through the public medical care schemes set up in those provinces.

In Quebec, Ontario, Saskatchewan, Alberta and British Columbia coverage extends to virtually all recipients of provincial aid, including persons receiving needs-tested supplements to old age security pensions (a special means test for health care enrolment is used in Ontario), recipients of old age assistance, mothers' allowances and their dependants, disabled persons' allowances, blindness allowances, general welfare assistance and, in some provinces, child wards, vocational rehabilitation recipients and short-term welfare recipients. Manitoba covers aged and infirm persons requiring custodial care, recipients of blind persons' allowances and recipients of mothers' allowances and their dependants. Nova Scotia enrols only blindness allowance recipients and mothers' allowance recipients and their dependants. All provincial programs provide comprehensive physician's services, including medical attendance in the home, office and hospital, surgery, diagnostic services and obstetrical care. Some limitations on billing for certain physician's services, such as surgery and hospital visits, exist in Nova Scotia.

Dental and optical care benefits are provided to all covered recipients in the four westernmost provinces, sometimes only on special authorization and/or with dollar limits. Ontario finances a program of dental care for the children of mothers' allowance recipients. Other services provided in some provinces include orthopedic appliances, physiotherapy, chiropody, chiropractic treatment, home nursing and transportation for medical reasons.

Recipients of public assistance in Newfoundland who are individually certified by the welfare officer in their area as being unable to meet their medical care payments can be given free service, including comprehensive medical service, out-patient drugs and dreasings, prosthetic appliances, transportation to and from hospital, dental care where available, and eye refractions and glasses.

Programs for Other Selected Groups.-Under the Cottage Hospital Plan, in about 18 rural cottage hospital districts, Newfoundland pays for subscribers' medical care in the home, doctor's office and out-patient climic or cottage hospital, as well as specialist care not available in the local area but secured in St. John's, Grand Falls or Corner Brook upon referral by the local doctor or nurse. Premiums charged vary according to district from $\$ 6$ to $\$ 2$ for a family and from $\$ 3$ to $\$ 12$ for a single person. Physicians in cottage hospital districts are paid a full-time salary which varies with the size of district, level of responsibility, years of experience and other factors. In 1964, about 205,000 persons were eligible under the program, or 42 p.c. of the provincial population. In three additional rural areas, the government subsidizes the costs of voluntary organizations that employ doctors and provide comprehensive services to area residents upon payment of a premium of $\$ 10$ for a family or $\$ 5$ for a single person. These plans cover $\$ 1,000$ persons, or 10 p.c. of the population.

Newfoundland also has a partially universal program-the Children's Health Service financed out of general revenues, which automatically covers all children under 16 years of age for in-hospital medical and surgical care, anaesthesia and special consultations. For services rendered, physicians are paid approximately 80 p.c. of the fees of the Newfoundland Division of the Canadian Medical Associstion. The Children's Health Service covers 218,000 children but, of these, some 113,000 reside in districts covered by the cottage hospital and voluntary schemes described in the preceding paragraph.

## Subsection 5.-Services for the Disabled and Chronically Ill

Physical medicine and rebabilitation departments have been established in most teaching, veterans' and children's hospitals. Complementing these are some 48 independent rehabilitation centres, including 27 children's centres and four workmen's compensation centres. Hospital services available to in-patients and out-patients include physieal medicine, physiotherapy, occupational therapy and social services; most of the children's hospitals and the teaching hospitals also supply speech therapy. The rehabilitation centres provide comprehensive medical, psychosocial and vocational services to more severely disabled persons who require intensive or long-term therapy. In addition, the children's hospitals and centres operate special education classes. Provincial and community agencies such as those providing vocational rehabilitation and home care services co-operate in the rehabilitation of disabled children and adults.

Most large general hospitals conduct special out-patient clinies for disabilities such as arthritis and rheumatism, diabetes, glaucoma, speech and hearing defects, heart diseases, orthopedic and neurological conditions. Voluntary agencies, which are concerned with specific disability groups such as arthritics, the blind, the deaf, children suffering from cystic fibrosis, haemophilia or muscular dystrophy, the mentally ill or retarded, or disabled persons generally, are also broadening their rehabilitation services. These agencies provide such services as counselling, the supply of personal aids and appliances, employment and education, and sheltered workshops and also participate in the provision of services for the homebound. More than 150 sheltered workshops were in operation in 1965, serving handicapped persons. Organized home care programs, under either hospital or community sponsorship, have been established in the principal cities, providing nursing, homemaker, physiotherapy and other services to the disabled, the chronically ill and the aged in their own homes. Several provincial health departments have instituted home nursing services to residents of outlying districts.

Provincial health, welfare and education departments and voluntary agencies are developing specialized services for physically and mentally handicapped children. Most provinces have established registries of handicapped children of varying coverage in cooperation with physicians, health units, hospitals and other agencies. Such registries, which are increasingly useful sources of morbidity statistics including congenital anomalies, assist in the planning and co-ordination of rehabilitation services. In addition, health departments and the crippled children's societies provide family counselling, recreation, transportation and foster-home care; travelling clinics extend services to outlying areas. Special schools or elasses for handicapped children are operated by local school boards in the main cities but most of the 10 residential schools for the deaf and the six for the blind are operated by the provincial education departments.

The Federal Government, through its National Fealth Grants (see p. 280), assists the provinces in their programs to develop medical rehabilitation services and facilities, to support the training of medical rehabilitation personnel (through grants to university schools and student bursaries), to provide equipment and to finance research. Three regional prosthetic research and training units in rehabilitation centres in Montreal, Toronto and Winnipeg and the Bio-Engineering Institute of the University of New Brunswick are supported by National Health Grants. These three regional centres and several juvenile amputee clinics in other cities are rehabilitating children with limb deformities or amputations. A federal-provincial program assists in the extraordinary rehabilitation,
maintenance and counselling costs on behalf of children with thalidomide-induced defects. The transfer of the prosthetic service for veterans to the Department of National Health and Welfare on Jan. 1, 1966, makes it possible for the provinces to extend these services to non-veterans.

## Section 3.-Hospital and Other Health Statistics

Statistical information on the health of Canadians is at present limited to the well established and highly standardized mortality, communicable disease and institutional statistics series, all of which have been available for a long period, and the recently established series covering operations under the federal-provincial hospital insurance program (pp. 281-284). Much statistical information is also available from provincial and other health sources.

Statistics on causes of death are given in the Chapter on Vital Statistics, pp. 255-258; those on hospital statistics in Subsection 1 following; and those on notifiable diseases in Subsection 2.

## Subsection 1.-Hospital Statistics*

Hospitals in Canada are grouped into two categories for statistical purposes-first according to ownership, i.e., public, private or federal, and second by type of service provided, i.e., general, allied special (which includes chronic, convalescent, rehabilitation, maternity, communicable disease and orthopedic hospitals), mental and tuberculosis. General hospitals, which account for the majority of beds, are further divided into size groupings in accordance with their rated bed capacity.

As shown in Table 5, the 1,452 hospitals of all types in operation in Canada during 1965 had a combined rated bed capacity of 210,367 The ratio of beds per 1,000 population, at 10.7, was slightly higher than in 1964 . General hospitals accounted for 54.1 p.e. of the total rated beds, the provincial ratio ranging from 4.9 in Quebec to 7.2 in Saskatchewan; mental hospitals accounted for 32.5 p.c. of the rated beds, allied special hospitals for 10.2 p.c. and tuberculosis sanatoria for 3.2 p.c.

[^98]5.-Number and Bed Capacity of Operating Hospitals (Public, Private and Federal) Operating in Canada, 156i-65

| Type | 1961 | 1962 | 1863 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Hospitals |  |  |  |  |
|  | No. | No. | No. | No. | No. |
| General. | 1,018 | 937 | 943 | 942 | 976 |
| Allied special. | 212 | 313 | 307 | 327 | 328 |
| Mentall. | ${ }_{58}^{89}$ | 87 | 82 | 100 | 103 |
| Tuberculosist | 56 | 48 | 42 | 45 | 45 |
| Totals. | 1,375 | 1,385 | 1,384 | 1,414 | 1,462 |
|  | Bedg |  |  |  |  |
|  | No. | No. | No. | No. | No. |
| General... | 99,530 | 103,607 | 106, 822 | 110.522 | 113,794 |
| Alied special | 16.350 | 19,454 | 21, 884 | 20, 802 | 21.421 |
| Tubercalosis ${ }^{\text {2 }}$ | 68,674 11,344 | 66,725 | 65.954 | 65,348 | 68.323 |
| Totals. | 195,898 | 200,027 | 202,651 | 203,223 | 210,367 |

[^99]${ }^{2}$ Tuberculosis hospitals only:
6.-Number and Bed Capacity of Hospitals (Publle, Private and Federal) Operating in Canada, by Province and Type, 1965


B Based on estimated population as at June 1, 1985.

6．－Number and Bed Capacity of Hospitals（Public，Private and Federal）Operating in Cansda，by Province and Type，1565－concluded

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline \multirow[b]{2}{*}{Province or Territory and Category} \& \multicolumn{3}{|c|}{Mental \({ }^{2}\)} \& \multicolumn{3}{|c|}{Tuberculosis \({ }^{3}\)} \& \multicolumn{3}{|l|}{Totals，All Hospitals} \\
\hline \& Hos－ pitals \& Beds \& Beds per 1，000 Popu－ lation \({ }^{1}\) \& Hos． pitals \& Beds \& Beds per 1，006 Popt－ lation \({ }^{1}\) \& Hos－ pitals \& Beds \& Beds per 1，000 Popu－ lation \({ }^{1}\) \\
\hline \begin{tabular}{l}
Newfoundiand－ \\
Public． \\
Private \\
Federal
\end{tabular} \& No．
\[
-
\] \& No．
826
\(=\)
\(=\) \& No．
1．7
－ \& No．
\(-\quad \mathrm{t}\)
\(=\) \& No．
278
- \& No．

$=0.6$ \& No．
-48
-1 \& No．
3.764
-35 \& No．
7.6
-0.1 <br>

\hline | Prince Edward Island－ Public． |
| :--- |
| Private． |
| Federal． | \& $-^{2}$ \& － \& | 3.7 |
| :--- |
| $=$ | \& $\sim^{1}$ \& $\sim_{-}^{90}$ \& $\stackrel{0.8}{-}$ \& $-12$ \& 1.210

10 \& －11．2 <br>
\hline  \& $-^{10}$ \& $\stackrel{2.963}{=}$ \& 3.9
$=$ \& $-^{2}$ \& $\stackrel{460}{\square}$ \& $\underset{\text {－}}{\text { 0．6 }}$ \& 59
1
5 \& 7,697
5
645 \& 10.1
-0.8 <br>

\hline | New Branswick－ Public． |
| :--- |
| Private |
| Federal | \& $\sim^{4}$ \& 2,018

- \& $\stackrel{3.2}{\square}$ \& $-^{3}$ \& $\stackrel{399}{-}$ \& $\stackrel{0.6}{\sim}$ \& 45
-3 \& 6.084
-360 \& 9.8
-0.6 <br>

\hline | Quebec－ |
| :--- |
| Public． |
| Private |
| Federal | \& 28 \& 20,304

- \& 3.6 \& 15
-1 \& 1,916
25 \& 0.3 \& 212
91
14 \& 53,480
2,949
2,275 \& 9.5
0.5
0.4 <br>

\hline | Ontario－ |
| :--- |
| Public． |
| Private． $\qquad$ |
| Federal． | \& 27 \& 22,326

- \& 3.3 \& 12
-1 \& $\xrightarrow{1,888}$ \& $\stackrel{0.3}{-}$ \& 258
97
18 \& 65,763
3.084
4,004 \& 9.8
0.5
0.8 <br>
\hline  \& $-4$ \& $\stackrel{3.462}{\text {－}}$ \& －${ }^{-6}$ \& $\simeq^{2}$ \& － \& $\stackrel{0.3}{=}$ \& 87
6
20 \& 9.881
122
875 \& 10.3
0.1
0.9 <br>

\hline | Saskatchewan－ Public． |
| :--- |
| Private Federal | \& $={ }^{4}$ \& 3.529

$\square$ \& 3.7
$=$ \& $-^{2}$ \& － 303 \& $\stackrel{0.3}{=}$ \& －${ }^{58}$ \& 11.115
180 \& 11.7
-0.2 <br>

\hline | Alberta－ |
| :--- |
| Public．． |
| Private． $\qquad$ |
| Federal． | \& ${ }^{8}$ \& | 5，485 |
| :--- |
| $=$ | \& － \& $z^{2}$ \& $\stackrel{562}{\square}$ \& $\stackrel{0.4}{=}$ \& $\underline{145}$ \& $\underset{1,071}{16,812}$ \& 11.6

-0.7 <br>

\hline | British Columbia－ |
| :--- |
| Public． |
| Private $\qquad$ |
| Federal $\qquad$ | \& 6

1 \& 6.346
-73

- \& 3.5
$\cdots$ \& $-{ }_{1}^{2}$ \& 163
-187 \& $\underline{0.1}$ \& 110
6
9 \& 16.155
149
2.077 \& 9.0
0.1
1.2 <br>
\hline Yukon and Northwest Territories－ Public． Private． Federal． \& 二 \& ＝ \& 二 \& 二 \& 二 \& － \& 10
1
20 \& 208
13
314 \& 6.7
0.3
7.8 <br>
\hline Canada－ Public． Prifate． Federal \& 94
-9 \& $\underset{\substack{67,667 \\-656}}{ }$ \& 3．5 \& 42
1

2 \& $$
\begin{array}{r}
6,462 \\
\mathbf{2 5} \\
\mathbf{3 4 2}
\end{array}
$$ \& 0.3

$-\quad$ \& 1,144
202

106 \& \[
$$
\begin{array}{r}
\mathbf{1 9 2 , 2 1 9} \\
6,32,2 \\
11,826
\end{array}
$$

\] \& | 9.8 |
| :--- |
| .8 |
| .8 | <br>

\hline
\end{tabular}

${ }^{1}$ Based on estimated population as at June 1， 1985
${ }^{2}$ Mental hospitals only；exclusive of psychiatric units in other hospitals． ${ }^{2}$ Tuberculosis hospitals only；exclusive of tuberculosig units io other hospitals．

Although 1965 figures on type of hospitals in operation and their rated bed capacities （Tables 5 and 6）were available for 1965 at the time of preparation of this Subsection，the most recent data obtainable for Tables 7 to 13 were for 1964.

The number of adults and children admitted to all hospitals in 1964 was 3,174,490, or 165 per 1,000 population compared with 164 in 1963 ; admissions to general hospitals numbered $3,020,070$, or 157 per 1,000 population. The average number of persons in hospital on any particular day during 1964 was 179,700, compared with 177,300 in 1963, with general hospitals accounting for 88,500 and mental hospitals for 69,100 . Occupancy rates varied according to type of hospital, being highest in public mental (106.4 p.c.) and lowest in tuberculosis (public 72.2 p.c. and private 71.9 p.e.). The occupancy rate in the largest group of hospitals-public general-decreased in 1964 to 80.8 p.c. from 81.4 p.c. in 1963.

## 7.-Movement of Patientst and Patient-Days in Operating Public, Private and Federal Hospitals, 1963 and 1964

Nore.-Figures include estimates for non-reporting bospitals.

| Type of Service and Itema | 1963 | 1964 | Type of Service and Item | 1963 | 1984 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Publuc | ospitalb |  | Private con | $\mathrm{dTLS}^{-}$ |
| General- concuded |  |  |  |  |  |
| Beds set up at Dec. 31 Admissions. | 2,771,403 | 2,868,015 | Beds set tap at Dec. 31. |  |  |
| Per 1,000 pop | 2, 146.7 | 149.1 | Admissions........... | 16,433 | 16,803 |
| Patient-days. | 28,228, 233 | 29,249.414 | Per 1,070 po | 0.9 | 0.9 |
| Per 1,000 population: | 1,493.9 | 1,520.2 | Patient-daya. | 1,148,407 | ,217,457 |
| Average daily number of patients. | 77,502.9 | 79,894.9 | Per 1,000 population ${ }^{2}$. . . . . . Average daily number of | 60.7 3.140 .8 | ${ }^{63.3}$ |
| Per 1,000 population ${ }^{2}$ | 8.1 | 8.8 | patients | 3,140.8 | 326.4 |
| ercentage occupa | 81.4 | 80.8 | Per 1,000 populatio Percentage occupanc | 0.2 88.7 | 01.2 |
| Alled Sperial- |  |  |  |  |  |
| Beds set up at Admissions. | 16,116 88,461 | 15.754 80,018 | Beds set up a | 648 | 706 |
| Per 1,000 popu | $8,4.7$ | 80.18 | Admigsions. | 3,958 | 4,213 |
| Patient-days.... Per 1,000 populs | $4,967,046$ 262.9 | 4,754, 277 247.2 | Patient-days | 215,006 | 46,095 |
| Per 1,000 population ${ }^{2}$....... patients. |  |  | Per 1,000 poppu Average daily | 11.4 | 12.8 |
| patients. <br> Per 1,000 $\qquad$ | 0.7 | 0.7 | patients.. | 589.1 | 672.4 |
| Percentage occup | 84.3 | 82.6 | Per 1,000 population ${ }^{*}$ Percentage occupancy | 97.4 | 106.1 |
| Mental-4 |  |  |  | Federal Hospitais |  |
| Admissions. | 39.559 | . 457 |  |  |  |
| Per $1,000 \mathrm{p} \bigcirc \mathrm{pu}$ | $24{ }^{2.1}$ | 25.059 .1 | Beds set up a | 9.598 | 9,517 |
| Patient-days | 24, 404, 858 | 25,059,761 | Admisaiong. | 83,343 | 82,441 |
| Per 1.000 populatio | 1,291.5 | 1,302.8 | Per 1,000 pop | ${ }_{4}{ }_{4} 4.4$ | ${ }_{4}^{4.3}$ |
| patients. | 862 | 469.5 | Pstient-days.,.... | $2,549,217$ 134,9 | $2,565,128$ 133.4 |
| Per 1,000 population | 3.5 | 3.6 | Per 1,000 papulation ${ }^{\text {a }}$. | 134.9 | 133.4 |
| Percentage occupancy ${ }^{\text {s }}$ | 108.4 | 106.4 | verage daily number of patients. | ,984.2 | 000.4 |
| Tuberculosi | 7.592 | 5,977 | Per 1,000 population ${ }^{2}$. . . . . | 0.4 | 72.5 |
| Beds set up at |  |  | Percentage occupancy ${ }^{\text {a }}$....... | 72.1 |  |
| Admissiong.... | 10,803 | 9,607 | Allied Special. |  |  |
| Per 1.000 popu | ${ }^{1963} 0.6$ | 1588.5 | Beds set up at Dec. 31 | 1.500 | 1,470 |
|  | $1,963,849$ 103.9 | 88,211 | Admissions................. | 3,359 | 2,962 |
| Per 1,000 population ${ }^{2}$. Average daily number of patients. <br> Per 1,000 population ${ }^{2} . . .$. . | $\begin{array}{r} 103.9 \\ 5,380.4 \\ 0.3 \\ 67.0 \end{array}$ |  | Per 1,000 population ${ }^{2}$. . . . | ${ }_{422,631}$ | 42180 |
|  |  |  |  | 22.4 | 21.9 |
|  |  | 0.2 72.2 | Average daily number of | 157.9 | 150.7 |
|  | ry | ospitals | 1.000 | 77.3 | ${ }_{79.5}^{0.1}$ |
| Gemeral- | 2,100 | 2,038 | Tuberctilesis - 5 <br> Beds set up at Dec. 31 |  |  |
| Beds set up at Dee. 31. |  |  |  | 634357 | 381361 |
| Admissions.... | 72,3723.8 | 69,614 | Admissions ................ |  |  |
| Per 1,000 popul |  |  | Per 1.000 population ${ }^{2}$. . . . . | 186.171 | 90,078 |
| Patient-days... | 593.1.4 | 595,392 31.0 | Patient-dsys. <br> Per 1,000 population ${ }^{2}$ |  |  |
| Per 1,000 population ${ }^{2}$....... Average daily namber of patients. | $\begin{array}{r} 1,625.0 \\ 0.1 \\ 78.0 \end{array}$ | $\begin{array}{r} 1,626.8 \\ 0.1 \\ 80.3 \end{array}$ |  | $\begin{array}{r} 455.3 \\ -\quad 71.7 \end{array}$ | 246.1 |
| Per 1,000 population ${ }^{2}$ |  |  |  |  | 71.8 |
| Persentage occupancy ${ }^{\text {. }}$. |  |  |  |  | 1.8 |

[^100]Average length of stay of adults and children separated from public hospitals in 1964 was 11.5 days, the same as in 1963 . The length of stay was considerably longer in chronic, convalescent and rehabilitation hospitals ( 151 days) than in general hospitals because of the nature of service provided. In public general hospitals, length of stay was 10.2 days (the same as in 1963), and ranged from 7.2 days in hospitals of $10-24$ beds to 14.1 days in those with 1,000 or more beds. The availability of specialized and referral services in the larger hospitals has a tendency to increase the average duration of stay.

## 8.-Average Length of Stay of Adults and Children in Publlc General and Aliled Spectal Hospitals, by Province, 1064

| Type of Hospital | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. | Men. | Sask. | Alta. | B.C. | Yukon | N.W.T. | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | days | days | days | days | days | days | day | days | days | days | days | days | days |
| General. | 12.2 | 9.5 | 10.6 | 9.9 | 10.2 <br> 9 <br> 8 | 10.9 | 9.1 | 9.5 | 8.9 | 9.6 6.0 | 6.6 | $\underline{10.8}$ | ${ }_{7}^{10.2}$ |
| 10-24 ${ }^{1-9}$ | 6.3 | 7.5 | ${ }_{8.1}^{10.0}$ | 7.9 | 7.5 | 8.0 | 7.9 | 7.2 |  | ${ }_{7}^{6.0}$ | 6.6 | 5.8 | 7.5 |
| 25-49" | 3.7 | 7.6 | 8.7 | 7.3 | 7.4 | 9.4 | 7.2 | 7.6 | 6.7 | 7.4 |  | 11.1 | 7.7 |
| 100-199 | ${ }_{12}^{11.4}$ | 7.3 | -9.9 | 8.4 | 8.1 8.6 | ${ }_{9.4}$ | 8.8 | ${ }_{10.1}^{8.5}$ | 8.9 | 8.0 |  | 17.8 | . 8 |
| 200-299 | 11.6 | 11.3 | 12.2 | 9.6 | 10.2 | 10.4 | 8.5 | 14.5 | 9.4 | 8.7 |  |  | 10.2 |
| $300-499$ |  |  | 10.1 | 12.2 | 10.6 | 11.1 | 9.7 | 11.4 | 9.4 | 10.9 |  |  | 10.8 |
| ${ }^{500-999}$ " | 26.6 | - | 14.2 | 15.5 | ${ }_{12}^{12.5}$ | 11.3 | 11.7 | 13.0 | 10.1 |  |  |  | 12.0 |
| 1,000 or more beds. |  |  |  |  | 13.3 | 14.3 |  |  | 15.2 | 14.2 |  |  | 14.1 |
| Allied SpecialChrotac, convahabilitation. | 115.8 | 63.8 | 41.2 | 46.2 | 170.0 | 178.9 | 85.9 | 254.5 | 195.5 | 51.0 |  |  | 151.0 |
| Maternity <br> Other. | 6.2 | - | 6.3 | 8.7 39.3 | 25.0 | $\begin{array}{r} 6.5 \\ 10.3 \end{array}$ | 二 | 3.5 | S.4 | 6.2 1.6 |  |  | 6.8 15.2 |
| All Public Hospitals.... | 12.5 | 0.8 | 10.6 | 10.3 | 12.0 | 12.3 | 10.8 | 10.3 | 10.7 | 9.8 | 6.6 | 10.8 | 11.5 |

Total full-time personnel employed in all Canadian hospitals in 1964 was estimated at 259,900 , an increase of 4.6 p.c. over 1963 . The ratio of full-time personnel per 100 rated beds amounted to 166.7 in general and allied special hospitals, 55.2 in mental hospitals and 82.1 in tuberculosis sanatoria. Analysis of general hospitals on a provincial basis reveals that the number of full-time employees per 100 rated beds ranged between 131.1 in Prince Edward Island and 210.6 in Quebec.

## 9.-Full-Time Personnel Employed in Operating Public, Private and Federal Hospitals, by Province, 1564

Nork.-Figures include estimates for non-reporting hospitals.

| Province or Territory | General |  | General and Allied Special |  | Mental ${ }^{1}$ |  | Tuberculosis ${ }^{2}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Per 100 <br> Rated <br> Beds | Number | Per 100 Rated Beds | Number | Per 100 <br> Rated Beds | Number | Per 100 <br> Rated <br> Beds |
| Newfoundland. | 1,194 | 172.9 | 4,407 | 170.9 | 650 | 78.7 | 212 | 76.3 |
| Prince Edward Island. | ,907 | 131.1 | 943 | 130.6 | 242 | 60.8 | 85 | 94.4 |
| Nova Scotia, | 8,152 | 174.5 | 8,455 | 174.1 | 1.0.02 | 54.2 | 458 | 130.1 |
| New Brunswick | 7,253 | 190.9 | 7,484 | 187.2 | . 846 | 53.4 | 482 | 85.8 |
| Quebec. | 56.857 | 210.6 | 64,913 | 184.6 | 9.382 | 49.8 | t, 162 | 69.7 |
| Ontario. | 70.303 | 181.7 | 77,250 | 167.8 | 13,658 | 61.7 | 1,268 | 78.2 |
| Manitoba.... | 9.714 | 170.1 | 11,101 | 163.9 | 1,623 | 46.9 | 347 | 75.4 |
| Saskatchewan | 10.660 | 155.3 | 11,000 | 147.7 | 1,005 | 54.0 | 321 | 102.9 |
| Alberta. | 14,388 | 155.6 | 18,379 | 140.0 | 2,065 | 51.3 | 454 | 80.1 |
| British Columbia..... | 15.830 147 | 145.7 | 16,384 | 143.8 | 3.362 | 53.9 | 408 | 97.4 |
| Northwest Territories... | 147 | 100.7 80.1 | 153 388 | 95.0 80.7 | - | 二 | - | - |
| Canada | 198,740 | 179.8 | 218,863 | 166.7 | 35,849 | 55.2 | 5,195 | 82.1 |

[^101]In 1964, paid hours of work by personnel in public hospitals per patient-day of care amounted to 12.7 hours; in private hospitals 6.3 hours; and in federal hospitals 9.5 hours. Paid hours of work by public general hospital personnel per patient-day of care was 13.6 hours, slightly higher than the 13.2 hours recorded in 1963. Hospitals with 1,000 or more beds averaged 16.0 hours per patient-day compared with 9.2 hours for hospitals in the $10-24$ bed range.

Total income of all public hospitals amounted to $\$ 1,148,000,000$ in 1964, an increase of 10.8 p.c. over the previous year. Most of the revenue was derived from net in-patient earnings, varying in proportion from 74.7 p.c. for mental hospitals to 94.2 p.c. for maternity hospitals. Total expenditures for 1964 were $\$ 1,194,000,000$, a rise of 10.8 p.c. over the 1963 total. Gross salaries and wages were the principal component, representing 64.3 p.c. of the total in general hospitals. Cost per patient-day of care in general hospitals advanced to $\$ 31.00$, or 8.5 p.c. over the previous year. Costs were directly related to size of hospital, increasing from $\$ 22.19$ in $10-24$ bed hospitals to $\$ 38.02$ in the largest hospitals. Among the provinces, general hospitals in Prince Edward Island recorded the lowest cost per patientday (\$22.76), and Quebec hospitals showed the highest (\$36.06).

## 10.-Revenues and Expenditures of Operating Public Hospitals, by Type, 1964

Note.-Figures include estimates for non-reporting hospitals.

| Type of Hospital | Operating Hospitals | Revenues |  |  |  | Expenditures |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{gathered} \text { Net } \\ \text { In- } \\ \text { patient } \\ \text { Earnings } \end{gathered}$ | Net Outpatient Earnings | Grants and Other Income | Total | Gross Salaries and Wages | Medical and Surgical Supplies | Drugs | Other | Total |
|  | No. | p.c. | p.c. | p.c. | \$'000 | p.c. | p.c. | p.c. | p.c. | \$'000 |
| General.......... | 845 | 88.4 | 5.3 | 6.3 | 868,226 | 64.3 | 3.3 | 3.9 | 28.5 | 906,864 |
| 1-9 beds... | 37 | 85.8 | 8.1 | 6.1 | 1,979 | 62.8 | 3.3 | 3.7 | 30.2 | 2,071 |
| 10-24 | 202 | 87.5 | 6.2 | 6.3 | 18,457 | 59.1 | 3.1 | 4.7 | 33.1 | 19,840 |
| 25-49 ${ }^{\text {- }}$ | 194 | 89.5 | 5.3 | 5.2 | 39,431 | 60.0 | 2.8 | 4.3 | 32.9 | 41,365 |
| 50-99 ${ }^{\text {a }}$ | 140 | 90.7 | 4.7 | 4.6 | 64,840 | 63.2 | 2.8 | 4.2 | 29.8 | 67,177 |
| 100-199 | 131 | 89.7 | 5.1 | 5.2 | 144,026 | 64.2 | 3.1 | 4.1 | 28.6 | 150,785 |
| 200-299 ${ }^{\text {". }}$ | 55 | 88.8 | 5.3 | 5.9 | 109,336 | 63.1 | 3.2 | 4.0 | 29.7 | 115,281 |
| 300-499 ${ }^{\text {a }}$ | 48 | 87.7 | 5.8 | 6.5 | 167,739 | 65.0 | 3.2 | 3.8 | 28.0 | 173,337 |
| 500-999 "' $\ldots$..... | 31 | 87.4 | 5.4 | 7.2 | 223,654 | 64.9 | 3.5 | 4.0 | 27.6 | 233,458 |
| 1,000 or more beds.. | 7 | 87.3 | 4.9 | 7.8 | 98,764 | 66.3 | 3.6 | 3.7 | 26.4 | 103,550 |
| Allied Special- |  |  |  |  |  |  |  |  |  |  |
| Chronic, convalescent and rehabilitation. | 96 | 91.8 | 1.4 | 6.8 | 59,100 | 67.8 | 1.2 | 2.4 | 28.6 | 61,272 |
| Maternity......... | 8 | 94.2 | 1.1 | 4.7 | 6,285 | 67.9 | 3.6 | 2.3 | 26.2 | 6,794 |
| Other............. | 47 | 71.7 | 8.3 | 20.0 | 12,099 | 64.0 | 1.6 | 2.4 | 32.0 | 13,001 |
| Mental.............. | 91 | 74.7 | 0.4 | 24.9 | 177,374 | 68.7 | 0.7 | 2.7 | 27.9 | 179,645 |
| Tuberculosis......... | 42 | 86.3 | 1.9 | 11.8 | 24,472 | 65.8 | 1.1 | 1.9 | 31.2 | 26,477 |

11.-Revenues and Expenditures of Operating Public General Hospitals, by Province, 1964

Note.-Figures include estimates for non-reporting hospitals.

| Province or Territory | Operating Hospitals | Total Revenue | Expenditures |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Drugs | Other | Total |
|  | No. | \$'000 | p.c. | p.c. | p.c. | p.c. | \$'000 |
| Newioundland. | 32 | 15,600 | 53.1 | 3.8 | 5.6 | 37.5 | 17,067 |
| Prince Edward Island. | 8 | 3,677 | 55.7 | 3.2 | 4.0 | 37.1 | 3,786 32,490 |
| Nova Scotia........ | 44 | 32,064 | 57.8 57.8 | 3.2 3.3 | 3.8 4.0 | 35.2 34.9 | 32,490 29,889 |
| New Brunswick | +34 | 29,694 238,656 | 57.8 65.3 | 3.3 3.3 | 4.0 | 34.9 27.4 | 259,866 |
| Ontario...... | 175 | 326,572 | 65.1 | 3.3 | 3.8 | 27.8 | 332,299 |
| Manitoba. | 77 | 39,337 | 64.7 | 3.4 | 4.8 | 27.1 | 39,376 |
| Saskatchewan. | 145 | 48,349 | 64.3 | 3.1 | 3.9 | 28.7 | 50,888 |
| Alberta....... | 106 | 60,172 | 62.2 | 3.2 | 3.8 | 30.8 | 63,615 |
| British Columbia. | 86 | 72,951 | 67.0 | 3.3 | 3.8 | 25.9 35.3 | 76,304 |
| Yukon Territory | $\stackrel{2}{8}$ | 156 998 | 55.7 55.5 | 3.8 2.0 | 5.2 | 35.3 40.3 | 1,128 |
| Northwest Territories | 8 | 998 | 55.5 | 2.0 | 2.2 | 40.3 | 1,128 |

12.-Revenues and Expenditures of Operating Publie Riospitals per Patient-Day (ercluding Newborn), 1964

| Type of Hoepital | Operating <br> Hospitals | Reverues |  |  |  | Expenditurea |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Net Nrt- patient Earnings | Net Outpatient Earning | Grante and <br> Other <br> Income | Tetal | Groses <br> Salaries and Wages | Medicsl Surgical Supplies | Drugs | Other | Total |
|  | No. | 5 | ¢ | $\%$ | \$ | \$ | \$ | \$ | \% | \$ |
| Geueral...... | 845 | 26.23 | 1.58 | 1.87 | 29.68 | 19.92 | 1.01 | 1.23 | 8.84 | 31.00 |
| 1-9 9 beds..... | 37 | 19.70 | 1.86 | 1.40 | 22.96 | 15.06 | 0.78 | 0.90 | 7.24 | 23.98 |
|  | 202 | 18.10 | 1.29 | 1.26 | 20.65 | 13.11 | 0.68 | 1.06 | 7.34 | 22.19 |
| 25-49 | 194 | 19.27 | 1.16 | 1.11 | 21.54 | 13.56 | 0.64 | 0.98 | 7.41 | 22.59 |
| 50-99 $\quad$ " | 140 | 20.90 | 1.08 | 1.06 | 23.04 | 15.08 | 0.68 | 1.00 | 7.12 | 23.88 |
| 100-199 * ...... | 131 | 24.51 | 1.40 | 1.44 | 27.32 | 18.35 | 0.80 | 1.18 | 8.19 | 28.60 |
| 200-299 * $\quad . .$. | 55 | 25.61 | 1.52 | 1.69 | 28.82 | 19.19 | 0.97 | 1.21 | 8.02 | 30.39 |
| 300-499 " | 48 | 27.81 | 1.81 | 2.03 | 31.15 | 20.92 | 1.05 | 1.22 | 9.00 | 32.19 |
| 500-999 ' $\cdots \cdots$. | 31 | 30.28 | 1.80 | 2.50 | 34.64 | 23.48 | 1.25 | 1.43 | 10.00 | 36.16 |
| 1,000 or more beds.. | 7 | 31.66 | 1.77 | 2.84 | 36.27 | 25.23 | 1.37 | 1.39 | 10.03 | 38.02 |
| Allied SpecialChronic, convslescent and rehabilitation.... | 96 | 13.10 | 0.46 | 0.71 | 14.27 | 10.02 | 0.17 | 0.35 | 4.23 | 14.77 |
| Matervity. . . . . . . | 8 | 33.02 | 0.39 | 1.64 | 35.05 | 25.74 | 1.38 | 0.86 | 9.91 | 37.89 |
| Other.............. | 47 | 24.70 | 3.27 | 6.47 | 34.44 | 23.73 | 0.61 | 0.89 | 11.86 | 37.09 |
| Mental............. . | 91 | 5.23 | 0.08 | 1.75 | 7.01 | 4.88 | 0.05 | 0.19 | 1.98 | 7.10 |
| Tuberculosis........ | 42 | 13.30 | 0.29 | 1.81 | 15.40 | 10.87 | 0.18 | 0.32 | 5.20 | 18.67 |

## 13.-Revenues and Expenditures of Operating Public Bospitals per Patient-Day (exchuding Newhorn), by Province, 1964

| Province and Type of Hespital | Total Revenue | Expenditures |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Medical and Surgical Supplies | Drugs | Other | Total |
|  | \$ | \$ | \$ | \$ | \% | \$ |
| Newfoundland- |  |  |  |  |  |  |
| General. | 24.00 | 13.96 | 1.00 | 1.47 | 9.84 | 26.27 |
| Mental....... | 10.84 | 6.18 | 0.13 | 0.40 | 4.13 | 10.84 |
| Tuberculosis. | 15.43 | 10.30 | 0.23 | 0.51 | 4,39 | 15.43 |
| Rrince Edward Island- |  |  |  |  |  |  |
| General. <br> Allied Specia:- | 22.51 | 12.67 | 0.73 | 0.92 | 8.44 | 22.76 |
| Chronic, convalescent and rehabilitation. | 20.39 | 14.23 | 0.97 | 0.29 | 5.93 | 21.42 |
| Mental..................................... | 7.84 | 4.83 | 0.05 | 0.32 | 2.64 | 7.84 |
| Tuberculosis. | 19.12 | 11.75 | 0.20 | 0.40 | 6.77 | 19.12 |
| Nova Scotle- |  |  |  |  |  |  |
| General <br> Allied Speciai | 28.68 | 16.79 | 0.83 | 1.11 | 10.23 | 29.06 |
| Chronic, convalescent and rehabilitation. | 26.47 | 16.33 | 0.76 | 0.49 | 10.10 | 27.68 |
| Maternity ................................ | 41.94 | 24.08 | 1.11 | 1.11 | 17.51 | 43.81 |
| Mental...... | 6.48 | 4,07 | 0.12 | 0.06 | 2.34 | 6.59 |
| Tuberculosis. | 25.73 | 17.30 | 0.75 | - | 7.69 | 25.74 |
| New Brunswlek- |  |  |  |  |  |  |
| General.... | 28.94 | 18.82 | 0.97 | 1.16 | 10.18 | 29.13 |
| Chronic, convalescent and rehabilitation.. | 19.61 | 12.57 | 0.32 | 0.67 | B. 28 | 19,82 |
| Maternity . . . . . . . . . . . . . . . . . . . . . . . . . . . | 46.72 | 27.67 | 0.94 | 0.28 | 23.89 | 52.78 |
| Other.,................... | 20,59 | 12.91 | 0.42 | 0.37 | 7.35 | 21.05 |

## 13.-Revenues and Erpenditures of Operating Public Fospitals per Ratient-Day (excluding Newborn), by Province, 1964-concluded

| Province or Territory and Type of Hospital | Total Revenue | Expenditures |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Grose Salaries Wagea |  | Drugs | Other | Total |
|  | \$ | \$ | \$ | \$ | \$ | \$ |
| New Erunswick-concluded |  |  |  |  |  |  |
| Mental. | 5.89 | 3.84 | 0.05 | 0.17 | 1.83 | 5.89 |
| Tuberculosis. | 18,74 | 12.36 | 0.13 | 0.31 | 5.94 | 18.74 |
| Quebec- |  |  |  |  |  |  |
| General <br> Allied Special- | 33.12 | 23.55 | 1.18 | 1.46 | 9.87 | 38.06 |
| Chrome, convalescent and rehabilitation. | 12.15 | 8.64 | 0.14 | 0.41 | 3.58 | 12.77 |
| Maternity .................................. | 35.27 | 27.62 | 1.16 | 1.06 | 9.82 | 32.66 |
| Other. | 26.37 | 19.83 | 0.43 | 0.82 | 7.69 | 28.77 |
| Mental.. | 5.59 | 3.76 | 0.02 | 0.23 | 1.86 | 5.87 |
| Tubeyculosis | 9.38 | 7.87 | 0.11 | 0.43 | 4.27 | 12.68 |
| Ontario- |  |  |  |  |  |  |
| General........ | 31.19 | 20.64 | 1.04 | 1.22 | 8.83 | 31.73 |
| Allied Special-- Chronic, convalescent and rehabilitation. |  |  |  |  |  |  |
| Mronic, convalescent and rehabilitation. | 15.11 36.05 | 10.68 26.23 | 0.17 2.80 | 0.30 | 4.14 7.99 | 15.29 37.02 |
| Other. | 75.71 | 45.80 | 1.35 | 1.53 | 33.08 | 81.76 |
| Mental.. | 7.97 | 5.90 | 0.06 | 0.17 | 1.84 | 7.97 |
| Tuberculosis. | 17.49 | 11.79 | 0.19 | 0.16 | 5.87 | 18.01 |
| Manltoba- |  |  |  |  |  |  |
| General Allied Special- | 27,18 | 17.60 | 0.93 | 1.30 | 7.88 | 27.21 |
| Chronic, convaleacent and rehabilitation. | 18.55 | 13.00 | 0.29 | 0.53 | 4.76 | 18.58 |
| Mental...................................... | 6.39 | 4.58 | 0.07 | 0.18 | 1.55 | 6.38 |
| Teberculosis. | 11.47 | 7.05 | 0.13 | 0.18 | 4.66 | 12.02 |
| Saskatchewan- |  |  |  |  |  |  |
| General. | 24.34 | 16.48 | 0.80 | 0.99 | 7.35 | 25.62 |
| Mental. | 7.74 | 5.58 | 0.03 | 0.18 | 1.95 | 7.74 |
| Tuberculosis. | 16.65 | 11.76 | 0.16 | 0.37 | 4.85 | 17.14 |
| Alberts- |  |  |  |  |  |  |
| General. | 25.28 | 16.63 | 0.87 | 1.00 | 8.23 | 26.78 |
| Allied Special- |  |  |  |  |  |  |
| Chrome, convalescent and rehabilitation. | ${ }_{26.73}^{12.70}$ | 8.49 20.30 | 0.16 1.39 | 0.75 | 5.84 | 28.28 |
| Other..... | 23.39 | 17.17 | 0.64 | 0.56 | 4.71 | 23.08 |
| Mental. | 7.27 | 4.89 | 0.05 | 0.13 | 2.20 | 7.27 |
| Tuberculosis. | 24.50 | 17.22 | 0.15 | 0.57 | 6.56 | 24.50 |
| British Columbia- |  |  |  |  |  |  |
| General. | 26.48 | 18.57 | 0.91 | 1.04 | 7.19 | 27.71 |
| Allied Special- |  |  |  |  |  |  |
| Chronic, convalescent and rehabilitation. | 18.62 | 13.97 | 0.16 | 0.23 | 5.70 | 20.06 |
| Maternity.. | 30.70 | 23.44 | 0.94 | 0.87 | 6.66 | ${ }_{7} 81.91$ |
| Mental........ | 7.92 21.76 | 5.03 17.24 | ${ }_{0}^{0.06}$ | 0.25 0.34 | $\stackrel{2.58}{3.95}$ | 7.92 21.76 |
| Yukon Territory - |  |  |  |  |  |  |
| General. | 50.25 | 27.97 | 1.91 | 2.61 | 17.76 | 50.25 |
| Northwest Territories- |  |  |  |  |  |  |
| General.. | 22.25 | 13.97 | 0.51 | 0.58 | 10.12 | 25.18 |

## Subsection 2.-Notifiable Diseases and Other Health Statistics*

Notifiable Diseases.-Three categories on the notifiable list established by the Dominion Council of Health continued to predominate in 1964: venereal diseases (23,401 cases), scarlet fever and streptococcal sore throat $(10,605)$, and infectious and serum hepatitis $(8,218)$. Together they accounted for about 73 p.c. of all new cases reported.

Since 1959, when the rate reached a high of 133.9 per 100,000 population, the incidence of scarlet fever and streptococcal sore throat has been declining, although the 1964 rate was slightly higher than that for 1963. In contrast, the rate of venereal disease notifications has risen from 97.3 per 100,000 population in 1959 to 121.7 in 1964. The incidence of viral hepatitis, after climbing alarmingly from a high of 29.9 per 100,000 population in the 1950s to 67.5 in 1961 and 1962, declined in 1964 to a level roughly midway between.

The incidence of poliomyelitis has shown the effects of control by the use of the Salk vaccine introduced in 1955 and the Sabin vaccine in 1962. In 1953, the year of highest incidence, there were 3,912 reported paralytic cases and 494 deaths compared with only 19 cases in all in 1964.

To indicate a crude death rate from communicable diseases in general, and the relationship between deaths from such diseases and deaths from all causes, the following notifiable diseases have been combined: diphtheria, malaria, measles, pertussis, scarlet fever and streptococcal sore throat, smallpox, tuberculosis, typhoid fever, typhus and other rickettsial diseases. Since 1947, when the death rate for these selected notifiable diseases was 49.5 per 100,000 population, the rate declined steadily to 21.0 in 1952, to 6.9 in 1958 and to 4.0 per 100,000 population in 1964.

- Prepared in the Public Health Section, Health and Welfare Division, Dominion Bureau of Statistics.
14.-Reported Cases of Selected Notifiable Diseases and Rates per $\mathbf{1 0 0 , 0 0 0}$ Population, 1961-64

| International List No. | Disease | Cases |  |  |  | Rates per 100,000 Population |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 1961 | 19621 | 1963 | 1964 | $1961{ }^{1}$ | 19621 | 1963 | 1964 |
|  |  | No. | No. | No. | No. |  |  |  |  |
|  | Brucellosis (undulant fever)... | 109 | 98 | 57 | 54 | 0.6 | 0.5 | 0.3 | 0.3 |
| 764 | Diarrhoea of the newborn, | 81 | 82 | 98 | 114 | 0.7 | 0.7 | 0.9 | 1.0 |
| 055 | Diphtheria.................... | 91 | 71 | 75 | 25 | 0.5 | 0.4 | 0.4 | 0.1 |
| 045, 046, 048 | Dysentery ${ }^{2} \ldots \ldots \ldots \ldots \ldots . .$. | 3,250 | 2,910 | 4,166 | 3,891 | 17.8 | 15.7 | 22.0 | 20.2 |
| 046 <br> 045 | Amoebic. | ${ }_{17}^{12}$ | ${ }^{7}{ }^{7}$ | . 20 | 50 | 0.1 |  | 0.1 | 0.8 |
| 045 | Bacillary............ | 1,479 | 1,241 | 1,448 | 1,346 | 8.1 | 6.7 | 7.7 | 7.0 |
| 049.0.042.1 | Encephalitis, infectious........ |  |  |  | 5 |  |  | 0.5 |  |
| 049.0, 044.1 | Food poisoning.............. | 1,288 | 1,412 | 1,116 | 1,582 | 10.7 | 11.6 | 9.0 | 12.5 |
| 092, N998.5 | Hepatitis, infectious (including serum hepatitis). | 12,314 | 12,538 | 10,080 | 8,218 | 67.5 | 67.5 | 53.3 | 42.7 |
| 080.2, 082.1 | Meningitis, viral or aseptic.... | ${ }^{412}$ | - 279 | 298 | 8, 163 | 3.5 | 2.3 | 2.3 | 1.3 |
|  | Meningococcal infections........ | 122 | 110 | 111 | 115 | 0.7 | 0.6 | 0.6 | 0.6 |
|  | Pemphigus neonatorum (impetigo of the newborn) ...... | 13 | 13 | 3 | 11 | 0.1 | 0.1 | 3 | 0.1 |
| 056 | Pertussis (whooping cough)... | 5,476 | 8,076 | 6,134 | 4,844 | 30.0 | 43.5 | 32.5 | 25.2 |
| 080.0, 080.1 | Poliomyelitis, paralytic...... | 188 | 89 | 122 | 19 | 1.0 | 0.5 | 0.7 | 0.1 |
|  | Scarlet fever and streptococcal | 13,060 | 10,241 | 9,922 | 10,605 | 71.6 | 55.1 | 52.5 | 55.1 |
| 040, 041 | Typhoid and paratyphoid fever | 266 | 10,277 | 147 | 195 | 1.5 | 1.5 | 0.8 | 1.0 |
|  | Venereal diseases ${ }^{2} \ldots \ldots \ldots . . .$. | 18,774 | 20,133 | 22,199 | 23,401 | 102.9 | 108.4 | 117.5 | 121.7 |
| 030-034 | Gonorrhoea... | 16,460 | 17,697 | 19,411 | 20,628 | 90.2 | 95.3 | 102.7 | 107.2 |
| $\begin{array}{r} 020,02,3^{\prime} \\ 026-029 \\ 029 \end{array}$ | \} Syphilis. | 2,511 | 2,432 | 2,785 | 2,771 | 12.7 | 18.1 | 14.7 | 14.4 |

[^102]${ }^{2}$ Includes other cases and cases where

## 15.-Reported Cases of Selected Notifiable Diseases and Rates per 100,000 Population,

 by Province, 1964

[^103] popolation.

## Subsection 3.-Numbers of Physicians and Earnings of Those in Private Practice

Numbers.-According to a survey conducted by the Department of National Health and Welfare, there were 21,011 active civilian physicians in Canada in 1962; the 1962 ratio of 881 persons per physician continues the postwar trend of improvement in physician supply. Table 16 shows the historical trend since 1901 and the provincial distribution for 1962. The ratio of 748 persons per physician for British Columbia in the latest year is the most favourable supply yet achieved by a Canadian province.
16.-Active Civilian Physicians and Population per Physician, 1901-62, and by Prorince, 1962

| Year | Active Civilian Physicians |  | Province or Territory | Active Civilian Physicians |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Population per Pbysician |  | Number | Population per <br> Physician |
|  |  |  | Newfoundland... | 304 | 1,539 |
| Cenous Data- |  |  | Prince Edward Island | 87 | 1,218 |
| 1901..... | 5,475 | 972 | Nova Scotia............ | 735 | 1,012 |
| 1911.... | 7,411 | ${ }^{970}$ | New Brunswick......... | 458 | 1,321 |
| 1921. | 8.706 | 1,008 | Quebec. . . . . . . . . | 5,932 | 902 |
| 1931. | 10,020 | 1,034 | Optario... | 7,826 | 808 |
| 1941. | 10,723 | 1,072 | Manitoba...... | 1,085 | +859 |
|  |  |  | Saskatchewan. | 1,367 | 1,010 |
| Register of Physicians- |  |  | British Columbia. | 2,210 | 748 |
| 1951.... | [4, 163 | 989 | Yukon and Nortbwest |  |  |
| 1954. | 15, 851 | 977 | Territories... | 25 | 1,560 |
| 1962................ | 19,011 | 881 | Canada | 21,011 | 881 |

I Includes 63 not allocated by province.
Table 17 shows that the physicians of Canada are more highly concentrated in the larger centres of population than is the population generally, and that this concentration has been increasing for both the total population and physicians. In addition, the percentage increase of the 1962 total of physicians in centres of fewer than 10,000 population over that for 1951 was less (5.8) than the percentage increase over 1951 of the 1959 total in these areas (11.9), indicating a decrease in the total number of physicians in these areas during the $1959-62$ period. Although the trends indicated in these data are slightly exaggerated by changes between censuses in the make-up of census metropolitan areas, it is clear that there is an over-all widening of the traditional disparity in availability of physician services between smaller localities and large urban centres.

## 17.-Percentages of Population and of Aetive Civilian Physicians in Centres of Over or Under 10, © O Population and Percentage Increases Over 1951

| Item | Percentages of Total |  |  | Percentage Increases Over 1951 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | In Centres of- |  | Total | For Centres of - |  | Total |
|  | $\begin{gathered} 10,000 \text { or } \\ \text { Over } \\ \text { Population } \end{gathered}$ | $\begin{gathered} \text { Under } \\ \text { 10,000 } \\ \text { Population } \end{gathered}$ |  | $\begin{gathered} 10,000 \text { or } \\ \text { Over } \\ \text { Population } \end{gathered}$ | Under 10.000 Population |  |
| $\begin{array}{r} \text { Population- } \\ 1951 \ldots . . \\ 1961 \ldots \ldots \end{array}$ | 48.2 57.7 | 51.8 42.3 | 100.0 100.0 | 50.9 | 6.3 | 30.2 |
| Physicians- $1951 \ldots \ldots$ $1954 \ldots \ldots$ $1999 \ldots$ $1962 \ldots$. | 73.22 73.72 78.23 81.04 | 26.8 26.3 21.8 19.0 | 100.0 100.0 100.0 100.0 | 12.3 46.8 64.6 | 9.3 11.9 5.8 | 11.5 37.4 48.8 |

[^104]${ }^{2}$ Size of place as in 1051 Census.

There has been little real change in recent years in the proportion of active civilian physicians who are engaged primarily in private practice; in 1954 it was 72.3 p.c., in 1959 an estimated 74.0 p.c. and in 1962 an estimated 73.4 p.c. The remainder were engaged in "other work" or were "interns, residents and fellows" In the 1959-62 period, however, a trend toward specialization was indicated by the rising proportion of specialists in private practice from 29.1 p.c. to 35.7 p.c. and of specialists in other work from 10.8 p.e. to 12.9 p.c. On the other hand, the proportion of physicians in general private practice dropped from 43.2 p.c. to 37.7 p.c. and of non-specialists in other work from 8.5 p.c. to 4.7 p.c. The increase from 8.3 p.c. to 9.0 p.c. in the proportion of physicians who were interns, residents and fellows is also indicative of increased specialization and the longer training period involved.

Earnings.-More than 98 p.c. of the earnings of privately practising physicians and surgeons in Canada were obtained from fees charged for individual items of professional service. As Table 18 shows, average gross earnings in 1964 from fees plus wages and salaries earned incidental to fee practice were $\$ 30,409$. This figure was 7 p.c. higher than in 1963 and 38 p.c. above the 1958 figure. The highest average gross earnings in 1964 were reported in Saskatchewan at $\$ 36,484$; in Ontario, Alberta and British Columbia they were above the national average. Average gross incomes in the remaining provinces ranged downward from $\$ 27,922$ in Manitoba to $\$ 23,088$ in Newfoundland. Generally, throughout the seven-year period 1958-64, highest average gross earnings have been most consistently reported in Ontario and the westernmost provinces.

The net returns to doctors, after deduction of the expenses of professional fee practice, reveal similar geographic patterns, as seen in Table 18. Net earnings for Canada as a whole averaged $\$ 20,374$ in 1964, 9.6 p.c. higher than in 1963 and 48 p.c. above the 1958 figure. The highest provincial average net income was reported by Saskatchewan doctors at $\$ 23,879$ followed by Ontario doctors at $\$ 22,247$. The lowest average net income was reported in Prince Edward Island.

## 18.-Average Gross and Net Professional Incomes of Physicians and Surgeons, by Province, 1958-64

| Province | $1958{ }^{\circ}$ | 1959 r | 1960* | 1961 r | 1962 | 1963 r | 1964 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Gross Profersional Incomes ${ }^{1}$ |  |  |  |  |  |  |
|  | \% | \$ | $\delta$ | \$ | \% | \$ | \$ |
|  | 19,199 | 19,289 | 21,741 | 20.945 | 19,379 | 21,288 | 23,088 |
| Prince Edmard Lsland................. | 17.809 | 18.854 | 20.177 | 20.001 | 19.676 | 23.413 | 23,157 |
| Nova Scotia.. | 19,667 | 21.341 | 22, 802 | 23.242 | 23,302 | 23,455 | 25,739 |
| New Brunswick | 19,538 18,264 | 18,918 | 22,523 19,656 | 24,220 22.118 | 23,978 23,418 | 26,376 25,748 | 27,802 28.813 |
| Quebee. | 18,264 23,415 | 18,721 24,153 | 19,656 | 22,118 | 23,418 27,779 | 25,748 30,641 | 28,813 33,201 |
| Manitoba | 24,108 | 26, 436 | 24,751 | 27,897 | 27,774 | 27+509 | 27,822 |
| Saskatchewan | 23.511 | 23.699 | 27.102 | 27,103 | 23.238 | 35,657 | 36, 484 |
| Alberta | 24,828 | 25, 254 | 28,032 | 29.221 | 31,187 | 30,912 | 32,690 |
| British Columbia | 24,909 | 26,628 | 28,086 | 27,867 | 27,498 | 27, 870 | 30.510 |
| Average for All Provinees.... | 22,014 | 32,8ti | 24.174 | 25,733 | 26,180 | 28,533 | 3t,409 |
|  | Net Professional Incomes* |  |  |  |  |  |  |
|  | \% | * | \$ | \% | \$ | * | \$ |
| Newfoundland ${ }^{2}$ | 14.012 | 13,970 | 15,981 | 15.120 | 14,753 | 15,653 | 16.981 |
| Prince Edward Island | 10,237 | 11.427 | 12,589 | 13,119 | 15,448 | 15.777 | 16.478 |
| Nova Scotis. | 12.862 | 14,820 | 16,074 | 18.070 | 15,925 | 15.839 | 17,851 |
| New Brunswick | 12.409 | 12.372 | 15, 385 | 16.288 | 16,418 | 17.701 | 18,255 |
| Quebec. | 11,136 | 11,795 | 12.870 | 14.454 | 15.173 18,308 | 16, 698 | 18,534 |
| Ontario... | 14,993 13,566 | 15.605 14.800 | 16,754 15.338 | 17,682 15.148 | 18,308 15.998 | 20,492 17,320 | 17,879 |
| Manitoba. | 13,566 14,527 | 14.800 15.086 | 15.338 15.955 | 15,148 15,843 | 15.998 14.619 | 17,320 21,685 | 17,879 |
| Alberta....... | 14.815 | 15.941 | 17.754 | 17.925 | 18,812 | 19,111 | 21.117 |
| British Columbia | 15.488 | 16,953 | 17,600 | 17,067 | 17,284 | 17,484 | 19,560 |
| A rerage for All Provinces. | 13,729 | 14,53y | 15,671 | 14.397 | 16,888 | 18,594 | 24,374 |

[^105]${ }^{3}$ Gross protessional incomea less expenses of practice.

## PART II.-PUBLIC WELFARE AND SOCIAL SECURITY

Responsibility for social welfare is shared by all levels of government. Comprehensive income-maintenance measures such as the Canada Pension Plan, old age security pensions, family allowances, youth allowances and unemployment insurance, where nation-wide co-ordination is required, are administered federally. The Federal Government gives substantial aid to the provinces in meeting the costs of public assistance and also provides services for special groups such as veterans, Indians, Eskimos and immigrants. The Department of National Health and Welfare is generally responsible for federal welfare matters although the Departments of Veterans Affairs, Indian Affairs and Northern Development and Manpower and Immigration operate the special programs.

Administration of welfare services is primarily the responsibility of the provinces but the provision of services is often assumed by local authorities, generally with financial aid from the province.

Co-ordination in welfare matters between different levels of government and between government and volumtary authorities is facilitated by the National Council of Welfare, an advisory body to the Minister of National Health and Welfare. The Council consists of the federal Deputy Minister of Welfare who acts as chairman, the provincial deputy ministers of welfare, and ten other persons appointed for three-year terms by the Governor in Council.

## Section 1.-Federal Government Programs

## Subsection 1.-Canada Pension Plan

The Canada Pension Plan, established under legislation enacted in 1965, is an important new component in Canada's social security system. The Plan is designed to provide, for members of the labour force, an organized program whereby each contributor builds up a right to a retirement pension, the amount of which is related to his previous earnings pattern. It also provides benefits to a disabled contributor and his dependent children and, at the contributor's death, a lump-sum death benefit together with monthly benefits for his widow and children. The Plan, together with its Quebec counterpart, will apply to about 92 p.c. of the Canadian labour force. Employees who earn $\$ 600$ or less in a calendar year or self-employed persons who earn less than $\$ 800$ do not pay contributions for that year. The collection of contributions began in January 1966.

The Canada and Quebec Pension Plans are closely co-ordinated and operate together as one and the same Plan. If an employee covered by the Canada Pension Plan takes employment in Quebec, or if a self-employed person moves his residence to that province, his contributions to the Quebec Pension Plan will produce the same benefits as if they had been made to the Canada Pension Plan. The reverse also applies.

The Canada Pension Plan is financed by contributions of employees, employers and self-employed persons and by interest earned by the fund. On earnings above $\$ 600$, which amount is exempt from contributions, and up to the present maximum on pensionable earnings of $\$ 5,000$ a year, the employee contributes 1.8 p.c. and his employer pays a matching amount. Self-employed people contribute at the combined rate of 3.6 p.c., also on annual earnings between $\$ 600$ and $\$ 5,000$. The contributory limits will be adjusted with changing economic conditions. The initial limits of $\$ 600$ and $\$ 5,000$ will prevail for the first two years of the Plan; for the next eight years these limits will be adjusted by means of a Pension Index which will reflect increases in the Consumer Price Index; after 1975, they will be adjusted according to changes in an Earnings Index which will be based on a long-term moving average of national wages and salaries. Retirement pensions under the Plan will come into effect according to the following staging: in 1967, retired contributors age 68 or over will be able to claim retirement pensions; in 1968, those who are age 67 or over can do so; in 1969, the eligible age will be 66 or over; and in 1970 and afterward, contributors age 65 or over will be eligible.

A retirement pension will be 25 p.c. of a contributor's average pensionable earnings, which will include the earnings on which contributions were made and also the $\$ 600$ exemption. In calculating a contributor's pension, his earnings for each year will be adjusted so that they will bear the same relationship to the maximum pensionable earnings in force at the time the pension begins that his earnings bore to the upper limit prevailing in the year in which they were actually received. His total adjusted pensionable earnings will be averaged over the entire period from the commencement of the program on Jan. 1, 1966, or from age 18 whichever is later, to the date the pension is first paid, but in no case will they be averaged over less than 120 months, unless a disability pension has been paid to the contributor in the interim. During the first ten years of the program, partial retirement pensions are payable; pensions become payable at full rates in 1976.

After 1975, certain periods of low earnings, or no earnings at all, can be disregarded in determining the average earnings on which retirement pensions are to be based. Contributory earnings received between ages 65 and 70 can be substituted for lower or no earnings of earlier periods of the same duration. In addition, 15 p.c. of the contributory period then remaining is dropped out, providing that the reduced period is not less than 120 months. These drop-out provisions make it possible for the person to receive a higher pension than would otherwise be the case.

A retirement pension is payable at any time between the ages of 65 and 70 , provided the contributor has then retired from regular employment. If he earas up to $\$ 900$ a year, he is considered as having been retired for purposes of applying for his pension. Those taking up new employment after starting to draw a retirement pension will be required to pass an earnings test. For earnings between $\$ 900$ and $\$ 1,500$ in any year, the pension will be reduced by one half of the difference between the actual earnings and $\$ 900$, the maximum reduction in this range being $\$ 300$. When earnings exceed $\$ 1,500$, the retirement pension will be reduced by $\$ 300$ plus all earnings in excess of $\$ 1,500$. However, no reduction will be made in the pension for any month in which the pensioner's earnings are $\$ 75$ or less, no matter what his earnings are for the entire year. The pension is payable at the full rate when the person attains age 70, regardless of earnings.

Pensions for disabled contributors* and for their dependent children will first be payable in the spring of 1970. Survivors' benefits, inciuding pensions for widows and disabled widowers,* orphans' benefits and the death benefit will first be payable early in 1968.

A contributor who becomes disabled after making contributions for the required period of time will be entitled to a disability pension consisting of a flat-rate component, initially $\$ 25$ monthly, and an earnings-related component amounting to 75 p.e. of a retirement pension, calculated as if he had then reached 65 years of age. In calculating this pension, earnings are averaged over the period from age 18 or Jan. 1, 1966 whichever is later, until the date the disability pension becomes payable, the minimum period for averaging being 60 months. In addition, benefits will be payable for the dependent children of a disability pensioner; that is, on behalf of unmarried children under age 18, or up to age 25 if in fulltime attendance at school or university. The montbly rate is $\$ 25$ for each of the first four eligible children and $\$ 12.50$ for each additional child.

A widow age 45 to 64 at her husband's death, a disabled widow* under age 65, and a widow under age 65 with dependent children will be entitled to a widow's pension if her husband has made the required number of contributions. It consists of a hat-rate component, initially $\$ 25$ a month, and an earnings-related component equal to 37.5 p.c. of the retirement pension payable to her deceased husband. If he was under age 65 at the time of his death the pension is calculated as if he had actually attained age 65 at that time. A widow who is not disabled and who does not have dependent children receives a reduced pension if she is under age 45 at the death of her husband; if she is under age 35 no widow's pension is payable until she reaches 65 years of age unless she becomes disabled in the interim.

[^106]Benefits payable for the children of a deceased contributor are the same as those provided for the dependent children of a disabled pensioner.

A woman widowed at age 65 or over or a widow reaching age 65 will receive a pension of 60 p.c. of her husband's retirement pension. If the husband was under age 65 when he died, his retirement pension is calculated as if he had then attained age 65. For widows age 65 or over who will also be entitled to retirement pensions of their own, two alternative formulae are provided for the re-calculation of their widow's pension, so that they may receive the more advantageous amount.

A pension is provided for the disabled widower* of a contributor if he was disabled at the time of his wife's death and was, at that time, wholly or substantially maintained by her. The rate of his pension is the same as that for a woman widowed between age 45 and 65. For a disabled widower reaching age 65 , or for a person becoming a disabled widower after age 65 the rate of pension is the same as for a widow of the same age. A disabled widower entitled to his own retirement pension is also provided with two alternative formulae for purposes of calculating his total retirement income. He must continue to prove disability for the duration of his pension.

A lump sum death benefit is payable subject to the same qualifying conditions as pertain to other survivors' benefits. The amount of the benefit is six times the monthly retirement benefit that is being (or would be) paid to the contributor in the month of his death, but cannot exceed 10 p.c. of the maximum on pensionable earnings for that year. If the contributor is under 65 years of age when he dies, the retirement pension will be calculated as if he were 65 at the date of death.

Canada Pension Plan benefits, once they have commenced to be paid, will be subject to annual adjustments in accordance with upward changes in the Pension Index. Benefits are payable no matter where the beneficiary may live, whether in Caaada or any other country.

The Department of National Health and Welfare administers the Canada Pension Plan through its head office in Ottawa and District Offices located in various centres across Canada. Contributions are collected by the Department of National Revenue. Employers are responsible for making deductions of contributions from their employees' earnings and for remitting these, along with their own matching contributions, to the Department of National Revenue. Self-employed persons make payments directly at the time such people normally pay their income tax. Everyone covered by the Plan must obtain a Social Insurance Number in order to identify and maintain his individual Record of Earnings. Even if a person does not obtain a number, he is still required to make contributions and any earnings received before a number is obtained may not be taken into account when calculating that individual's pension.

Appeals in connection with coverage and contributions may be made to the Minister of National Revenue. If an employee is not then satisfied, he may appeal further to the Pension Appeals Board whose decision is final. A self-employed contributor follows the appeal procedures of the Income Tax Act. With regard to benefits, there is a threestage appeal procedure: first, to the Minister of National Health and Welfare; secondly, to a Review Committee; and thirdly, to the Pension Appeals Board whose decision is final and binding.

Contributions to the Plan, other than those required for immediate administrative eosts and payment of benefits, may be borrowed by a provincial government on the basis of the relationship between contributions by residents of that province and all contributions at rates of interest determined in accordance with the legislation. Provision is made for the establishment of an advisory committee to review the operation of the Act, the state of the investment fund, and the adequacy of the coverage and benefits provided under the legislation. The legislation provides authority whereby the government may enter

[^107]into reciprocal arrangements with other countries where there is a common interest in as full coverage as possible and in the portability of pensions and where mutually satisfactory agreements can be reached.

## Subsection 2.-Old Age Security

Under the Old Age Security Act of 1951, as amended, a universal pension of $\$ 75$ a month is payable by the Federal Government to all persons who meet the residence and age qualifications. Until 1965, the pension was payable to those age 70 or over but in 1966 it is payable to persons age 69 or over, in 1967 to those age 68 or over, and 80 on until by 1970 it will be payable to everyone age 65 or over. In 1968 and succeeding years, the amount of the pension will be adjusted in line with changes in the Pension Index developed for the Canada Pension Plan (see p. 309).

The old age security pension is payable to a person of attained age who has resided in Canada for ten years immediately preceding his application for the pension. Any gaps in the ten-year period may be offset if the applicant had resided in Canada in earlier years for periods of time equal in total to double the length of the gaps; in this case, however, the applicant must also have resided in Canada for one year immediately before his application for pension. The pension is also payable to persons of attained age who have left Canada before reaching that age but who have had 40 years of residence in Canada since age 18. A pensioner may absent himself from Canada and continue to receive payments. If he has lived in Canada for 25 years since his 218t birthday, payment outside of Canada may continue indefinitely; if not, payment is continued for six months, in addition to the month of departure, and is then suspended, to be resumed only with the month in which he returns to Canada.

The program is administered by the Department of National Health and Welfare through regional offices located in each provincial capital, to which application is made for pension. It is financed through a 3-p.c. sales tax, a 3-p.c. tax on corporation income and, subject to a limit of $\$ 120$ a year, a $4-$ p.c. tax on taxable personal income.
1.-Old Age Security Statistics, by Province, Year Ended Mar. 31, 1s66 with Totals for 1964-66

| Province | Pensioners in Mareh | Net Pensions Paid during Fiscal Year | Provioce or Territory | Pensioners in March | Net Pensions Paid during Fiscal Year |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \$ |  | No. | \$ |
| Newfoundland. | 21,184 | 17,586, 159 | Alberta.................. | 74,514 | 62,793,976 |
| Prince Edward Island | 8,809 | 7,447,170 | British Columbia......... | 135,550 | 115,202,880 |
| Nova Scotis. | 49,801 | 42,048,599 | Yukon Territory ........... | ${ }_{506}^{296}$ | 254.880 405.690 |
| New Brunswick | 36,852 242,865 | 30,994,768 | Northwest Territories | 506 | 405,690 |
| Ontario. | 402,997 | 337, 194, 513 | Canada. . . . . . . . . 1886 | 1,105,776 | 927,259,487 |
| Manitoba. | 65,758 | 55, 494,509 | 1965 | 933,582 | $885,24,468$ |
| Saskatchewan | 66,638 | 56,755, 191 | 1964 | 971,801 | 808,301,300 |

## Subsection 3.-Family Allowances

The Family Allowances Act of 1944 is designed to assist in providing equal opportunity for all Canadian children. The allowances do not involve a means test and are paid from the federal Consolidated Revenue Fund. They do not constitute taxable income but there is a smaller income tax exemption for children eligible for allowances.

Allowances are payable in respect of every child under the age of 16 years who was born in Canada, or who has been a resident of the country for one year, or whose father or mother was domiciled in Canada for three years immediately prior to the birth of the child. Payment is made by cheque each month, normally to the mother, although any person who substantially maintains the child may be paid the allowance on his behalf. Allowances are
paid at the monthly rate of $\$ 6$ for each child under 10 years of age and $\$ 8$ for each child age 10 or over but under 16 years. If the allowances are not apent for the purposes outlined in the Act, payment may be discontinued or made to some other person or agency on behalf of the child. Allowances are not payable for any child who fails to comply with provincial school regulations or on behalf of a girl who is married and under 16 years of age.

The program is administered by the Department of National Health and Welfare through regional offices located in each provincial capital. The Regional Director located at Edmonton also administers the accounts of residents in the Yukon and Northwest Territories.

The Federal Government pays family assistance, at the rates applicable for family allowances, for each child under 16 years of age resident in Canada and supported by an immigrant who has landed for permanent residence in Canada, or by a Canadian returned to Canada to reside permanently. The assistance, which is payable monthly for the first year of the child's residence in Canada, is intended to bridge the gap until the child becomes eligible for family allowances.
2.-Family Allowances Statistics, by Province, Year Ended Mar. 31, 1966 with Totals for 1964-66

| Province or Territory | Families Receiving Allowance in March | Children for Whom Allowance Paid in Mareb | Average Number of Children per Family in March | Average Allowancel |  | Net <br> Total Allowances Paid during Fiscal lear |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Per Family | $\underset{\text { Child }}{\text { Per }}$ |  |
|  | No. | No. | No. | \$ | \$ | \$ |
| Newfoundland. | 69,346 | 210,512 | 3.04 | 20.40 | 6.71 | 16,945,059 |
| Prince Edward Island. | 14,054 | 30,632 | 2.82 | 19.03 | 6.75 | 3,231.718 |
| Nova Scotia.................... | 104,856 | 267, 889 | 2.55 | 17.18 | 6.74 | 21,636,528 |
| New Brunswick | 82,851 | 233,724 | 2.82 | 19.05 | 6.76 | 18,982,908 |
| Quebec. | 782,955 | 2,043,428 | 2.57 | 17.38 | 6.76 | 164.972,052 |
| Ontario. | 983,502 | 2,284,059 | 2.32 | 15.61 | 6.73 | 182,377,587 |
| Manitoba.. | 132.148 | 321,747 | 2.43 | 16.30 | 6.71 | 25,925.991 |
| Saskatchewan. | 131.266 | 332,952 | 2.54 | 17.11 | 6.74 | 28,988+369 |
| Alberta. | 213.489 | 525.859 | 2.46 | 16.58 | 6.74 | 42,345,742 |
| British Columbia | 254,87] | 589.041 | 2.31 | 15.60 | 6.75 | 47,006,572 |
| Yukor Territory. | 2,153 | 5,295 | 2.46 | 16.15 | 6.57 | - 424,673 |
| Northwest Territories........... | 4.145 | 11.119 | 2.68 | 17.76 | 6.63 | 897,627 |
| Canada. . . . . . . . . 1988 | 2,785,636 | 6,865,057 | 2.46 | 16.59 | 8.74 | 551,734,824 |
| 1985 | 2,744,549 | 6,817,013 | 2.48 | 16.68 | 6.72 | 515,775,931 |
| 1944 | 2,711,272 | 6,736,157 | 2.48 | 16.67 | 6.81 | 538,312,224 |

${ }^{1}$ Based on gross paymeat for March.

## Subsection 4.-Youth Allowances

Legislation providing for a program of youth allowances became effective Sept. 1, 1964. The Federal Government does not provide youth allowances in Quebec, which has its own program, but that province is compensated by a tax abatement adjusted to equal the amount that the Federal Government would otherwise have paid in allowances to Quebec residents.

Under the federal program, monthly allowances of $\$ 10$ are payable in respect of all dependent youths age 16 and 17 who are receiving full-time educational training or are precluded from doing so by reason of physical or mental infirmity. Both the parent or guardian and the youth must normally be physically present and living in a province other than Quebec. The allowance is not payable to a parent who resides in Quebec or outside Canada, regardless of where his child may be attending school. However, a dependent youth may attend school in Quebec or outside Canada, or, if disabled, receive care or training in Quebec or outside Canada and still be considered eligible, on the basis that he is a resident of a province other than Quebec but is temporarily absent.

Allowances normally commence with the month following that in which family allowances cease and continue until the school year terminates. They are paid retroactively for the summer months when the youth returns to school at the commencement of the new school year. Allowances for a disabled child not attending school, however, are payable continuously throughout the year. Should the youth leave school, leave the country permanently, cease to be maintained, take up residence in Quebec, or die, the allowance will cease. Otherwise, the youth allowance continues until the end of the month in which the youth reaches age 18. Youth allowances are considered not to be income for any purpose of the Income Tax Act.

The program is administered by the Department of National Health and Welfare. The National Director of the family allowances and old age security programs also administers youth allowances, assisted by regional directors located in each of the provincial capitals other than Quebec City. The costs of youth allowances are met from the Consolidated Revenue Fund.

## 3.-Youth Allowances Statisties, by Province, Year Ended Mar. 31, 1966 with Totals for 1965 and 1966

| Province or Territory | Youtbs for Whom Allowance Paid in March |  |  | Net Total Allowance Paid during Fiscal Year |
| :---: | :---: | :---: | :---: | :---: |
|  | Attending School Full-Time | Having Physical or Mental Infirmity | Total <br> Youths |  |
|  | No. | No. | No. | \$ |
| Newioundland. | 14,970 | 151 | 15,121 | 1,591,901 |
| Prince Edward Island. | 3,583 | 40 | 3.593 | 395,485 |
| Nova Scotia. | 22,972 | 176 | 23,148 | 2,691, 768 |
| New Bronswick | 19,888 189.923 | 204 783 | 20.072 190.706 | 2,311,244 |
| Manitoba | 189,923 27,930 | 788 148 | 190,706 28.078 | $21,978,399$ $3,249,490$ |
| Saskatchewan. | 29.605 | 94 | 29.699 | 3,414,834 |
| Alberta....... | 41,877 | 181 | 42,058 | 4,836,771 |
| British Columbia | 51,556 | 214 | 51,770 | 5,934, 292 |
| Yukion Territory. | 258 | 1 | 269 | 30,210 |
| Northwest Territories. | 290 | - | 290 | 34,176 |
| Canada. | 402,802 | 1,992 | 404,794 | 46,468,554 |
|  | 396,277 | 1,756 | 398,033 | 26,869,815 ${ }^{1}$ |

1 Seven montbs; program became effective Sept. 1, 1964.

## Section 2.-Federal-Provincial Programs

## Subsection 1.-Canada Assistance Plan

The Canada Assistance Plan, a comprehensive public assistance measure to complement the provisions of the Canada Pension Plan, which received Royal Assent on July 15, 1966 (SC 1966, c. 45), will provide a single administrative framework for federal sharing with the provinces in costs of assistance and of welfare services. It is designed to replace the four existing programs of unemployment assistance, old age assistance, blind persons' allowances and disabled persons' allowances but the provinces will have the option of continuing separate administration of the categorical programs, and the provision for contracting out that now applies to the four programs under the Established Programs (Interim Arrangements) Act will extend to the Canada Assistance Plan.

The Plan authorizes the Federal Government to enter into an agreement with any province to share, on an equal basis, the costs of assistance to persons in need and of improving or extending welfare services. From Apr. 1, 1966, the Plan will cover those costs shared under the Unemployment Assistance Act (see p. 317) and will extend federal sharing to the following costs: assistance to needy mothers with dependent children, maintenance of children in the care of provincially approved child welfare agencies, health care services to needy persons, and extension of welfare services to prevent and remove causes of poverty and to assist persons receiving assistance to achieve the greatest possible degree of self-support. The only eligibility requirement is that of need, irrespective of the cause of need and without reference to employment status. Need is to be determined by a needs test. No residence requirements are specified and a province may not require a period of previous residence in the province as a condition of eligibility for assistance or for continued assistance. No maximum amounts of assistance are set and rates and conditions of aid are set by the provinces. The resulting flexibility will enable the provinces to adjust rates to local conditions and to take into account the needs of special groups by providing a differential in benefits or conditions of eligibility.

The costs of improving or extending welfare services, for the purposes of federal reimbursement, may be calculated either as the amount by which the cost, to the province and the municipalities, of providing welfare services exceeds the cost in the base year ended Mar. 31, 1965, or as the cost, to the province and the municipalities, of employing persons who are engaged wholly or mainly in the performance of welfare service functions and who are employed in positions filled after Mar. 31, 1965. At the option of the province, separate agreements may be entered into providing for the sharing of costs of work activity projects to prepare persons in need for entry or return to employment and for the sharing of costs of extensions of provincial welfare services to Indians on reserves, Crown lands or in unorganized territory. The former agreement would cover 50 p.c. of certain operating and maintenance costs; the latter may provide for a federal contribution in excess of 50 p.c.

## Subsection 2.-Old Age Assistance

The Old Age Assistance Act of 1951, as amended, provides for federal reimbursement to the provinces for assistance to persons age 65 or over who are in need and who have resided in Canada for at least ten years or who, if absent from Canada during this period, have been present in Canada prior to the commencement of the ten-year period for double any period of absence during the ten years. A pensioner is transferred to old age security on reaching the eligible age for it. The federal contribution may not exceed 50 p.c. of $\$ 75$ a month or of the assistance paid, whichever is less. The province administers the program and, within the limits of the federal Act, may fix the amount of assistance payable, the maximum income allowed and other conditions of eligibility. Effective Apr. 1, 1965, Quebec withdrew from this federal-provincial program under the Established Programs (Intexim Arrangements) Act, which entitles the province to a tax abatement as an equalization payment.

For an unmarried person, total income allowed, including assistance, may not exceed $\$ 1,260$ a year. For a married couple it may not exceed $\$ 2,220$ a year or, when the spouse is blind within the meaning of the Blind Persons Act, $\$ 2,580$ a year. Assistance is not paid to a person receiving an old age security pension or an allowance under the Blind Persons Act, the Disabled Persons Act, or the War Veterans Allowance Act.

Recipients of old age assistance who are in need may receive supplementary aid under general assistance programs in the provinces. In certain circumstances, the Federal Government may share in such aid under the Unemployment Assistance Act (see p. 317).

## 4.-Oid Age Assistance Statistics, by Provinee, Year Ended Mar. 31, 1966 with Totals for 1964-66

| Province | Recipients in Month of March | Average Monthiy ance | Federal Contribution during Year | Province or Territory | Recipienta in Month of Mareh | $\begin{aligned} & \text { A verase } \\ & \text { Monthly } \\ & \text { Assist- } \\ & \text { ance } \end{aligned}$ | Federal Contribution during Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \$ | \$ |  | No. | + | \$ |
| Newfoundland. . ..... | 4.080 | 72.14 | 2,121,068 | Alberta. ${ }^{\text {a }}$ ( ${ }^{\text {a }}$. | 5.453 | 68.61 | 2,795,633 |
| Prince Edward Island... | 988 | 70.73 | 498.378 | British Columbia...... | 5,478 | 71.74 | 2,836+336 |
| Nova Scotia . ........... | 4, 123 | 67.96 | 2,188,257 | Yukon Territory....... | - 26 | 75.00 | 2, 13, 553 |
| New Brunswick......... | 4,200 | ${ }_{1}^{69.72}$ | 2,181,779 | Northwest Territories.. | 133 | 73.84 | 73.722 |
| Ontario | 19,991 | 67.28 | 10,005,001 | Canada. ......, 1596 | 52,9882 | 68.85 | 6,980,5102 |
| Manitobs | 4,241 | 69.02 | 2,188,141 | 1965 | 107,354 | 69.13 | 4,990,955 |
| Saskatchewan | 3.975 | 68.87 | 2,097, 642 | 1564 | 105,241 | 65.72 | 30, 208,181 |

${ }^{1}$ Effective Apr. 1, 1965, assistance ceased to be paid to Quebec (see on p. 315).
${ }^{2}$ Excludes Quebeo.

## Subsection 3.-Allowances for Blind Persons

The Blind Persons Act of 1951, as amended, provides for federal reimbursement to the provinces for allowances to blind persons age 18 or over who are in need. The federal contribution may not exceed 75 p.c. of $\$ 75$ a month or of the allowance paid, whichever is less. The province administers the program and, within the limits of the federal Act, may fix the amount of allowance payable and the maximum income allowed. Effective Apr. 1, 1965, Quebec withdrew from this federal-provincial program under the Established Programs (Interim Arrangements) Act, which entitles the province to a tax abstement as an equalization payment.

To qualify for an allowance a person must meet the required definition of blindness and have resided in Canada for ten years immediately preceding commencement of allowance or, if absent from Canada during this period, must have been present in Canada prior to its commencement for a period equal to double any period of absence during the period. For an unmarried person, total income including the allowance may not exceed $\$ 1,500 \mathrm{a}$ year; for a person with no spouse but with one or more dependent children, $\$ 1,980$; for a married couple, $\$ 2,580$. When the spouse is also blind, income of the couple may not exceed $\$ 2,700$. Allowances are not payable to a person receiving assistance under the Old Age Assistance Act, an allowance under the Disabled Persons Act or the War Veterans Allowance Act, a pension under the Old Age Security Act or a pension for blindness under the Pensions Act.

Recipients of blindness allowances who are in need may receive supplementary aid under general assistance programs in the provinces. In certain circumstances, the Federal Government may share in such aid under the Unemployment Assistance Act (see p. 317).

## 5.-Statisties of Allowances for the Blind, by Province, Year Ended Mar. 31, 1966 with Totals for 1964-66


${ }^{1}$ Effective Apr. 1, 1985, assistance ceased to be paid to the Province of Quebec under this program.
: Er.
cludes Quebec.

## Subsection 4, -Allowances for Disabled Persons

The Disabled Persons Act of 1954, as amended, provides for federal reimbursement to the provinces for allowances paid to permanently and totally disabled persons age 18 or over who are in need and who have resided in Canada for at least ten years immediately preceding commencement of allowance or, if absent from Canada during this period, have been present in Canada prior to its commencement for a period equal to double any period of absence during the period. To gualify for an allowance a person must meet the required definition of "permanent and total disability" The federal contribution may not exceed 50 p.c. of $\$ 75$ a month or of the allowance paid, whichever is less. The province administers the program and, within the limits of the federal Act, may fix the amount of allowance payable, the maximum income allowed and other conditions of eligibility. Effective Apr. 1, 1965, Quebee withdrew from this federal-provincial program under the Established Programs (Interim Arrangements) Act, which entitles the province to a tax abatement as an equalization payment.

For an unmarried person, total income including the allowance may not exceed $\$ 1,260$ a year. For a married couple the limit is $\$ 2,220$ a year except that if the spouse is blind within the meaning of the Blind Persons Act, income of the couple may not exceed \$2,580 a year. Allowances are not paid to a person receiving an allowance under the Blind Persons Act or the War Veterans Allowance Act, assistance under the Old Age Assistance Act, a pension under the Old Age Security Act, or a mother's allowance. The allowance is not payable to a patient in a mental institution or a tuberculosis sanatorium. A recipient who is resident in a nursing home, an infirmary, a home for the aged, an institution for the care of incurables, or a private, charitable or public institution is eligible for the allowance only if the major part of the cost of his accommodation is being paid by himself or another individual.

Recipients of disability allowances who are in need may receive supplementary aid under general assistance programs in the province. In certain circumstances the Federal Government may share in such aid under the Unemployment Assistance Act (see below).
6.-Statistics of Allowances for Disabled Persons, by Province, Year Ended Mar. 31, 1966 with Totals for 1964-66

| Province | Recipients in Month of March | Average Monthy ance | Federal Contribution during Year | Province or Territory | Recipients in Month of March | Average Monthly Allow- ance anc | Federal Contribution dnring Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | * | \$ |  | No. | \$ | \% |
| Newfoundland. ........ | 1,817 | 74.49 | 804, 197 | Alberts. | 1,933 | 73.18 | 851,833 |
| Prince Edward Island... | 788 | 74.25 | 349,881 | British Columbia | 2,385 | 73.86 | 1,061,500 |
| Novs Scotia, | 3.474 | 73.92 | 1,524,103 | Yukon Territory ........ | 2 | 75.00 | ${ }_{19}^{900}$ |
| New Brunswick | 2.320 | 74.34 | 1,030,637 | Northwest Territories.. | 26 | 74.47 | 19,376 |
| Ontario. | 18,406 | 73.10 | 7,823,576 | Canada ..... 1986 | 34,5882 | $73.51{ }^{2}$ | 14,979,4302 |
| Manitoba | 1,566 | 73.80 | 688,650 | 1965 | 53,103 | 73.86 | 4,365,438 |
| Saskatchewan. | 1,871 | 74.08 | 824,777 | 1964 | 51,671 | 69.48 | 29,206,543 |

${ }^{\text {t }}$ Effective Apr. 1, 1965, assistance ceased to be paid to the Province of Quebec under this program. : Ex ciudes Quebec.

## Subsection 5.-Unemployment Assistance

Under the Unemployment Assistance Act 1956, as amended, the Federal Government may enter an agreement with any province to reimburse it for 50 p.c. of the unemployment assistance expenditures made by the province and its municipalities to persons and their dependants who are unemployed and in need. All provinces and territories have signed agreements under the Act. The rates and conditions of assistance are determined by the provinces or by their municipalities. Payments to both employable and unemployable persons are sharable under the agreements, as are the costs of maintaining persons in homes
for special care, such as nursing homes or homes for the aged. The Federal Government shares in additional assistance paid to needy persons in receipt of old age security pensions, old age assistance, blind persons' allowances, disabled persons' allowances and unemployment insurance benefits, where the amount of the assistance paid is determined through an assessment of the recipient's basic requirements and of his financial resources. The Act will be replaced by the Canada Assistance Plan (see pp. 314-315).

## 7.-Unemployment Assistance, by Province. Year Ended Mar. 31, 1965 wlth Totals for 1963-65

| Province | Recipients in Marct | Federal Share of Unemployment Assistance Costs ${ }^{2}$ | Province or Territory | Recipients ${ }^{2}$ in March | Federal Share of Unemployment Assistance Costs: |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \% |  | No. | + |
| Newioundland.... | 58,931 | 4,620,079 | Alberta................... | 60.653 | 9,707,440 |
| Prince Edward Island | 2,628 | 305.535 | Britiah Columbia. . . . . . . . | 92, 192 | 17,177,880 |
| Nova Scotia. ${ }_{\text {New Branswick.... }}$ | 26,991 | 1,875, 679 | Yukon Territory........... Northwest Territories..... | 1,322 1,179 | 71,509 98.672 |
| Quebec...... | 248,334 | 41,877,054 |  |  |  |
| Ontario. | 135,347 | 25,812,190 | Canada. . . . . . . . 1965 | 723, 373 | 112,889,8\% |
| Manitoba | 31,446 | 5,203.784 | 1964 | 733,489 | 168,197,974 |
| Saskatebewan | 40,600 | 4,578,307 | 1963 | 764,164 | 56,184,793 |

[^108]
## Subsection 6.-Fitness and Amateur Sport Program

The Fitness and Amateur Sport Act of 1961, administered by the Minister of National Health and Welfare, provides up to $\$ 5,000,000$ a year to be spent on the encouragement, promotion and development of active leisure pursuits for everyone in Canada. Although the federal, provincial and municipal governments provide the funds and resources, the programs are carried out almost entirely by non-governmental agencies. Under the Act, Canadian participation in active recreation and amateur sport can be promoted internationally, nationally, provincially and locally through financial assistance, technical guidance, the provision of teaching materials, assistance to training, research and the construction of facilities. The National Advisory Council of Fitness and Amateur Sport advises the Minister of National Health and Welfare in fitness and amateur sport matters; its 30 members are chosen for their interest and experience, with at least one member from each province.

The federal program has five elements. Grants to National Organizations, totalling more than $\$ 1,000,000$ a year, go to some 50 national fitness and sporting organizations to help train coaches, to improve standards of instruction, to increase participation in sports, to aid the holding of national and regional competitions, and to assist Canadian athletic teams at international competitions. Grants for Athletic Events of nation-wide interest assist in the holding of such events as the 1967 Pan-American Games in Winnipeg and the 1967 Canadian Winter Games in the Quebec area. Grants for Training and Research are made for graduate study in fitness and amateur sport, for research fellowships, and for scholarships and bursaries for undergraduate study in physical education and recreation. The Research Committee of the National Advisory Council, which is composed of leading scientists, reviews applications for aid and makes recommendations on general program policy to the Council. Services of the Department of National Heallh and Welfare include the provision of technical advice, training material and promotional aids. Visual aids for coaching, printed guides on particular sports and recreational activities, and technical information on the construction and use of facilities are provided. Typically Canadian sporting and recreational activities have been featured by "How To" kits that include an illustrated manual, a film to rouse interest in the subject, and films in which techniques are demonstrated; these kits and other films are available from the Department's Fitness Film

Library. Committees of the National Advisory Council meet frequently with the executives of sports organizations to discuss policy and a federal-provincial committee of government officials advises on and co-ordinates governmental aspects of the program. The Department also co-ordinates work done by other federal agencies in fitness and amateur sport. Grants to the Provinces of $\$ 1,000,000$ a year are made to those that enter into costsharing agreements for provincial programs of fitness and amateur sports. The Federal Government meets 60 p.c. of the cost of projects and the full cost of the scholarships and bursaries. Applications for ali grants at the provincial or local level are made in the first instance to the responsible provincial department. Most of the ideas for recreational activities and plans originate in the municipal recreation departments where the needs of the individual communities are best known.

## Subsection 7.-National Welfare Grant Program

The National Welfare Grant Program was established in 1962 to help develop and strengthen welfare services in Canada through a general welfare and professional training grant and a welfare research grant. For the year ending Mar. 31, 1967, \$2,000,000 was allotted to the program. Provincial governments, municipal welfare departments, nongovernmental welfare and correctional agencies, universities and individuals may be the ultimate recipients of grants under one or more provisions of the program. Some are financed and administered entirely by the Federal Government; others require application through a provincial department of welfare that actually makes the award on a costsharing basis with the Federal Government.

General welfare, bursary, training and staff development grants are shared provisions. Geueral welfare grants provide funds for projects to improve welfare administration, to develop provincial consultative and co-ordinating services, and to strengthen and extend public and voluntary welfare services in child welfare, aging, general assistance and other welfare fields. Bursaries are provided for full-time graduate training at Canadian schools of social work, and training grants are available for employees of government and voluntary welfare agencies. Staff development grants provide support for a wide variety of staff training programs for personnel employed, or to be employed, in public and non-governmental welfare agencies. The other provisions of the program are administered by the Federal Government. Welfare scholarships are awarded for graduate study in Canadian schools of social work and fellowships for advanced study at Canadian and foreign universities. Teaching and field instruction grants assist Canadian schools of social work with the salaries of additional staff required to implement the program.

Under the welfare research grant, funds are provided for a variety of research studies undertaken by public and voluntary welfare and correctional agencies, universities and research institutions.

The flexibility of the program was increased by policy changes made in 1966. Dernonstration grants, to test new and different ways of providing services, previously given on a shared-cost basis, no longer require sharing. Also, national voluntary welfare agencies may now submit directly to the Federal Government projects related to the strengthening and development of welfare services not covered by other provisions of the program.

Total expenditures under the program for the year ended Mar. 31, 1966 amounted to $\$ 1,131,749$, distributed as follows: research, $\$ 112,023$; bursaries, fellowships and scholarships, $\$ 142,253$; training, $\$ 111,250$; teaching and field instruction, $\$ 233,287$; staff development, $\mathbf{3 9 9 , 7 3 4}$; and welfare services and demonstration projects, $\$ 433,202$.

## Subsection 8.-Vocational Rehabilitation

The federal-provincial vocational rehabilitation program, started in 1952, was consolidated and extended under the Vocational Rehabilitation of Disabled Persons Act, 1961. Under federal-provincial agreements to share equally the costs of co-ordination,
assessment and provision of services to disabled individuals, of training personnel and of research, the provinces have developed comprehensive programs in co-operation with existing services. Approved services comprise medical, social and vocational assessment, counselling, restorative services, vocational training and employment placement. A provincial co-ordinator of rehabilitation is responsible for the co-ordination and administration of these services to disabled individuals in each province. In the year ended Mar. 31, 1966, the provincial staff employed in vocational rehabilitation totalled 323.

The federal aspects of the program are administered by the National Co-ordinator of Rehabilitation through the Civilian Rehabilitation Branch of the Department of Manpower and Immigration. The Minister of that Department receives the advice of the National Advisory Council on the Rehabilitation of Disabled Persons, composed of representatives of the provinces, employers, labour, the medical profession, national voluntary agencies and the universities. In 1965-66, federal-provincial expenditures under the program (exclusive of vocational training) totalled $\$ 1,714,623$. Full reports were received on 2,451 disabled persons rehabilitated during the year; before rehabilitation most of these persons and their dependants relied on private or public assistance for support at an estimated annual cost of $\$ 1,600,000$ but following rehabilitation the estimated amount earned by those gainfully employed was $\$ 5,600,000$.

The Civilian Rehabilitation Branch, through its Division of Older Workers, also has the function of encouraging a more favourable employment climate for older workers through the development of a long-range educational program, the encouragement of research, the maintenance of liaison with employer and labour organizations and voluntary agencies in Canada and other countries, and the assembly and dissemination of information.

Under the sections of the Technical and Vocational Training Assistance Act of 1961 that provide for equal federal-provincial sharing of the cost of approved programs for the training of disabled persons for gainful employment, there were in 1965-66 approximately 3,900 persons enrolled in various courses; federal payments amounted to $\mathbf{5 7 9 9 , 8 9 4}$. Referrals for job placement are made to 386 special services officers in 211 local Manpower and Employment Offices. Placements of handicapped persons in 1965-66 (including those referred from provincial rehabilitation authorities) numbered 23,658.

With the integration of the federal-provincial vocational rehabilitation program into the new Canada Manpower Services,* vocational rehabilitation services will be increasingly extended to persons with handicaps to employability other than physical and mental impairment.

## Section 3.-Provincial Welfare Programs

Major welfare programs governed by provincial legislation include general assistance and social allowances, mothers' allowances, services for the aged, and child welfare services. Also, the Province of Quebec has established and is operating the Quebec Pension Plan, which is comparable to the Canada Pension Plan; both Plans commenced in January 1966 and are to be closely co-ordinated (see pp. 309-312). In most provinces, responsibility for a number of the programs is shared by the provinces and their municipalities. Provincial administration is carried out through the department of public welfare in each province; several departments have established regional offices to facilitate administration and to provide consultative services to the municipalities.

The provincial departments of public welfare are placing increasing emphasis on standards of administration and on rebabilitative services for social assistance recipients, several provinces having recently introduced legislation under which the province will share with the municipalities the costs of preventive and rehabilitative welfare services. In the field of child welfare, the main efforts are being directed toward improvement of standards with particular emphasis on preventive casework services for children in their own homes, development of specialized children's institutions, group-living homes, and the finding of adoption homes for all children in need of them.
*See Cbapter XVIII on Labour.

Public services are supplemented by those of voluntary agencies whose interests include the welfare of families and children and of groups with special needs, such as the aged, recent immigrants, youth groups, and released prisoners. Welfare councils and social planning councils contribute to the planning and co-ordinating of local welfare services. Local voluntary agencies and institutions may receive public grants, depending on the nature and standard of their services, although, with the exception of the semi-public children's aid societies, their main support is usually from united funds or community chests, or from sponsoring organizations.

## Subsection 1.-General Assistance

All provinces make legislative provision for general assistance on a means or needs test basis to needy persons and their dependants who cannot qualify for other forms of aid, and some provinces include those whose benefits under other programs are not adequate. Where necessary, the aid may be for maintenance in homes for special care. In addition to financial aid for the basic needs of food, clothing, shelter and utilities, some provinces provide incapacitation or rehabilitation allowances, counselling and homemaking services, and post-sanatorium care and some provide allowances to persons with long-term need: persons who are uable to support themselves because of mental or physical disability or because of their age, mothers with dependent children and, in two provinces (Ontario and Quebec), needy widows and unmarried women of 60 years of age or over. This assistance is administered by the province or by the municipalities with substantial financial support from the province, which, in turn, is reimbursed by the Federal Government under the Unemployment Assistance Act for 50 p.c. of the provincial and municipal assistance given (see p. 317).

The provincial departments of public welfare have regulatory and supervisory powers over municipal administration of general assistance and may require certain standards as a condition of provincial aid. Length of residence is not a condition of aid in any province, but the residence of the applicant as defined by statute determines which municipality may be financially responsible for his aid. This rule does not apply in three provinces; British Columbia and Saskatchewan have equalized municipal payments and Quebec does not require its municipalities to contribute to general assistance costs. Provinces with unorganized areas take responsibility for aid in these districts. Under the federal Unemployment Assistance Act, all provinces have agreed that residence shall not be a condition of assistance for applicants who move from one province to another. For persons without provincial residence (usually a period of one year), aid may be given by the province or the municipality and a charge-back may or may not be made to the province or municipality of residence.

The formula for provincial-municipal sharing of costs is determined by the province. A substantial proportion of the costs of aid given to needy persons is borne by the province through assumption of responsibility for aid to certain categories of persons and through reimbursement of municipal expenditures varying by province from 40 p.c. to 100 p.c. In Nova Scotia, New Bruaswick and Ontario, the province also reimburses the municipalities for 50 p.c. of the costs of administration. In British Columbia, the province shares with the municipalities expenditures on the salaries for social workers. In Newfoundland all aid is provincialiy administered. During 1966, a number of provinces introduced legislation extending provincial responsibility for the financing of welfare services.

## Subsection 2.-Mothers' Allowances

All provinces make provision for allowances to needy mothers. A number of provinces include such allowances in a broadened program of provincial allowances to persons in several categories of long-term need or have incorporated this legislation with general
assistance within a single Act, while continuing separate administration. In British Columbia, on the other hand, aid is provided to needy mothers under the general assistance program on the same basis as to other needy persons.

Subject to conditions of eligibility which vary from province to province, mothers' allowances or their equivalents are payable from provincial funds to applicants who are widowed, or whose husbands are mentally incapacitated or are physically disabled and unable to support their families. They are also payable to deserted wives who meet specified conditions; in several provinces to mothers whose husbands are in penal institutions, or who are divorced or legally separated; in some, to unmarried mothers; and in Ontario, Quebec and Nova Scotia to Indian mothers. Foster mothers are eligible under certain circumstances in most provinces.

The age limit for children is 16 years in most provinces, with provision made to extend payment for a specified period if the child is attending sehool or if be is physically or mentally handicapped. In all provinces applicants must satisfy conditions of need and residence but the amount of outside income and resources allowed and the length of residence required prior to application vary, the most common period being one year. One province has a citizenship requirement.
8.-Motbers' Allowances, by Province, as at Mar. 31, 1965 with Totals for 1963-65

: Includes dependent fatbers assisted under the General Weliare Asgistance Act. $\quad 2$ An additional 4, 106 families wilh 12.540 children were assisted under Part III of the Public Wellare Act; cost of allowances for this group is not a vailabie separately.
${ }^{2}$ Exclusive of British Columbia.

## Subsection 3.-Living Accommodation for Elderly Persons

In all provinces, homes for the aged and infirm are provided under provincial, municipal or voluntary auspices. These homes are required to meet standards set out in provincial legislation relating to homes for the aged, welfare institutions, or public health. Voluntary homes are usually provincially inspected and in some provinces must be licensed.

Most of the provinces make capital grants toward the construction or renovation of homes for the aged by municipalities or voluntary organizations and exempt homes for
the aged from municipal taxation; some guarantee the repayment of loans made for the construction of homes. Most provinces also make provision for capital grants to municipalities, voluntary organizations, or limited-dividend companies for the construction of low-rental housing for the elderly. These projects are usually built under Sect. 16 of the National Housing Act, which provides for long-term low-interest loans to limited-dividend companies constructing low-rental self-contained or hostel accommodation for the elderly. Units for the elderly may also be included in low-rental public housing projects for families built under Sect. 35 of the Act. Three provinces guarantee the repayment of loans made for the construction of low-rental housing, and one province pays an annual maintenance grant for such housing.

In some provinces efforts are made to place well, elderly people in small proprietary boarding homes. Elderly persons who are chronically ill may be cared for in chronic or convalescent hospitals, private or public nursing homes and some homes for the aged, All provinces contribute to the maintenance of needy persons in homes for the aged or other homes for special care, and these costs are shared by the Federal Government under the Unemployment Assistance Act (see p. 317). Under its Elderly Persons Social and Recreational Centres Act, Ontario provides for a provincial grant of up to 30 p.c. of the cost of constructing or acquiring a building for use as a centre if the local municipality contributes 20 p.c. of the cost.

## Subsection 4.-Child Welfare Services

Child welfare services, which include child protection and care, services for unmarried parents and adoption services, are provided in all provinces under provincial legislation. The program may be administered by the provincial authority or the responsibility may be delegated to local children's aid societies (voluntary agencies with boards of directors, operating under charter and under the general supervision of provincial departmenta). In Newfoundland, Prince Edward Island and Saskatchewan, child welfare services are administered by the province; in Alberta they are mainly administered by the province although in the larger urban centres there is some delegation to the municipality; in Quebec they are administered by recognized voluntary agencies and institutions, religious and secular; in Ontario and New Brunswick, a network of local children's aid societies is responsible for the services; in Nova Scotia, Manitoba and British Columbia, services are administered by local children's aid societies in the heavily populated areas and by the province elsewhere.

Children's aid societies and the recognized agencies in Quebec receive substantial provincial grants and sometimes municipal grants and in many areas they also receive support from private subscriptions or from community chests or united funds. Maintenance costs for children in care of a voluntary or public agency may be borne entirely by the province or partly by the municipality of residence and partly by the province.

The child welfare agencies, provincial or private, have the authority to investigate cases of alleged neglect and, if necessary, to appretend a child and to bring the case before a judge upon whom rests the responsibility of deciding whether in fact the child is neglected. When neglect is proved, the court may direct that the child be returned to his parent or parents, under supervision, or be made a ward of the province or a children's aid society or, in Quebec, be placed under the authority of a suitable person or agency whose services may involve casework with families in their own homes, care in foster boarding homes or adoption homes, or, for children who need it. in selected institutions. Children placed for adoption may be wards or they may be placed on the written consent of the parent. Adoptions, including those arranged privately, number about 14,000 annually.

Child welfare agencies make use of the small selective institution for placement of children who are forced to be away from their own homes for a short period or who may
need preparation for placement in foster homes, and emphasis is increasingly being placed on group-living homes. The development of small, highly specialized institutions, which function as treatment centres for emotionally disturbed children, is of particular significance. Institutions for children are governed by provincial cbild welfare legislation and by provincial or municipal public health regulations; they are generally subject to inspection and in some provinces to licensing. Sources of income may include private subscriptions, provincial grants, and maintenance payments on behalf of children in care, payable by the parents, the placing agency or the responsible municipal or provincial department.

Services to unmarried parents include casework services to the mother and possibly to the father, legal assistance in obtaining support for the child from the father, and fosterhome care or adoption services for the child. Support for unmarried mothers may be obtained under general assistance programs. In many centres, homes for unmarried mothers are operated under private or religious auspices.

Day nurseries for the children of working mothers are established only in the larger centres and chiefly under voluntary auspices. Licensing is required in five provinces but Ontario is the only province with a Day Nurseries Act.

## Section 4.--International Welfare*

Canada's participation in the international welfare activities of the United Nations and its Specialized Agencies and of other international organizations is co-ordinated by the Department of National Health and Welfare.

Canada has been on the Executive Board of the United Nations Children's Fund (UNICEF) since the Fund was created in 1946, except for a three-year period from 1959 to 1961. The Deputy Minister of National Welfare, the Canadian representative on the Executive Board of UNICEF, was elected Chairman of the Board in February 1966 after serving two consecutive terms as Chairman of its Programme Committee. Some 224 UNICEF-assisted projects are at present benefiting the health, education and welfare of needy children in 84 developing countries and territories. Canada is also sepresented on the Economic and Social Council of the United Nations and on the Governing Body of the International Labour Organization.

Through multilateral and bilateral programs, Canada contributes technical assistance to developing countries in the social as well as in other fields. Academic training and observation tours are arranged for foreign students in Canadian universities and institutions and Canadian welfare experts are sent abroad to help in the social development of less advanced nations. In addition to the activities and contributions by the Canadian Government, Canadian voluntary agencies are active in providing aid to developing countries and participating in international discussions of welfare matters.

## PART III.-HEALTH AND SOCIAL WELFARE EXPENDITURES

## Section 1.-Government Expenditures on Health and Social Welfare

In the seven years ended Mar. 31, 1959-65, expenditures of all levels of government on health and social welfare rose from $\$ 2,821,000,000$ to $\$ 4,466,500,000$, an increase of 58 p.c. If these figures are adjusted to take account of the growth in population, the increase in per capita expenditures-from $\$ 164$ to $\$ 231$-is about 41 p.c. Government expenditures may also be measured in relation to major economic indicators; on this basis, annual

[^109]government expenditures on health and social welfare rose over the 1959-65 period from 11.1 p.c. to 12.5 p.c. of net national income and from 8.4 p.c. to 9.3 p.c. of gross national product. The federal share of health and social welfare expenditures fell from 73.9 p.c. in 1958-59 to 66.4 p.c. in 1964-65, the provincial share rose from 22.2 p.c. to 30.7 p.c. and municipal outlays declined from 3.9 p.c. to 2.9 p.c. Compared with the previous year, 1963-64, health and social welfare expenditures by all levels of government increased by $\$ 379,000,000$ or 9 p.c. Although outlays by all governments increased, provincial expenditures showed the greatest gain.

Of considerable interest is the growing proportion of government expenditures on health and social welfare taken up by health programs; in 1958-59 such programs accounted for $\$ 624,000,000$ or 22 p.c. and in $1964-65$ for $\$ 1,573,000,000$ or 35 p.c.


An outline of the principal components for 1964-65 shows the magnitude of the major programs and services-family allowances payments amounted to $\$ 546,000,000$, old age security payments to $\$ 885,000,000$, unemployment insurance benefits to $\$ 335,000,000$, veterans' pensions and allowances to $\$ 180,000,000$ and $\$ 93,000,000$, respectively, and payments from the Prairie Farm Emergency Fund to $\$ 11,000,000$. These income-maintenance programs were entirely the responsibility of the Federal Government. In addition, payments under the youth allowances program, which commenced in September 1964, amounted to $\$ 27,000,000$. The Province of Quebec had instituted a program of schooling allowances three years prior to the introduction of the federal program. This necessitated a special arrangement with Quebec whereby that province continued its program, but with appropriate fiscal arrangements with the Federal Government.

Federal-provincial income-maintenance programs required expenditures of $\$ 90,000,000$ for old age assistance, $\$ 7,500,000$ for blindness allowances, nearly $\$ 77,000,000$ for disabled persons allowances and $\$ 215,000,000$ for unemployment assistance, the latter including some municipal expenditure. Effective Apr. 1, 1965, Quebec withdrew from these federalprovincial programs under the Established Programs (Interim Arrangements) Act which entitles that province to a tax abatement as an equalization payment. Workmen's Compensation Boards spent $\$ 120,000,000$ on cash benefits for pensions and compensation. Welfare services for Indians and for veterans and the national employment service accounted for $\$ 50,000,000$ at the federal level and child welfare services required an expenditure of approximately $\$ 60,000,000$ by provincial governments.

In the field of health, federal grants to the provinces under the Hospital Insurance and Diagnostic Services Act totalled almost $\$ 434,000,000$ and grants for hospital construction and general health grants to the provinces and municipalities amounted to $\$ 57,000,000$. The Federal Government spent $\$ 31,000,000$ on its Indian and northern health services and $\$ 47,000,000$ on hospital and treatment services for veterans. Provincial expenditures on hospital care are estimated to have totalled $\$ 740,000,000$, and $\$ 100,000,000$ was spent on other health services. Workmen's Compensation Boards paid $\$ 54,000,000$ for medical aid and hospitalization, and municipal governments spent $\$ 81,000,000$ on health.
1.-Total, per Capita and Percentage Distribution of Government Expendtures on Health and Social Weifare, by Level of Government, Years Ended Mar. 31, 1959-65

| Year Ended Mar. 31- | Federal | Provincial | Municipal | Total |
| :---: | :---: | :---: | :---: | :---: |
|  | Total Expenditures |  |  |  |
|  | \$'000,000 | \$ 0000000 | 8 000,000 | \$'000,000 |
| 1959. | 2,084.7 | 627.4 | 109.3 | 2,821.3 |
| 1961. | 2,162.2 | 884.7 | 108.4 | 3,023.3 |
| 1962. | 2,575.8 | 998.1 | 107.8 | 3.681 .8 |
| 1963. | 2,682.3 | 1,082.7 | 117.3 | 3,882.2 |
| 1964. | 2,799.7 | 1,164.4 | 123.0 | 4,087.1 |
| 19651 | 2,967,7 | 1,369.8 | 129.0 | 4,466.5 |
|  | Pre Capta Expenditurds |  |  |  |
|  | \$ | \$ | 8 | * |
| 1959. | 121.53 | 36.57 | 6.37 | 164.47 |
| 1960. | 123.20 | 43.00 | 6.06 | 172.27 |
| 1961. | 131.28 | 49.27 | 6.08 | 186.62 |
| 1962. | 140.32 | 54.37 | 5.87 | 200.57 |
| 1963. | 143.57 | 57.95 | 6.28 | 207.79 |
| 1964. | 147.26 153 | 61.25 70.75 | 6.47 6.66 | 214.98 230.69 |
| 19651. | 158.28 | 70.75 | 6. 66 | 230.69 |
|  | Pergentage Distribotion |  |  |  |
| 1959. | 73.9 | 22.2 | 3.9 | 100.0 |
| 1960. | 71.5 | 25.0 | 3.5 | 100.0 |
| 1961. | 70.4 | 26.4 | 3.2 | 100.0 |
| 1962. | 70.0 | 27.1 | 2.9 | 100.0 |
| 1963. | 69.1 68.5 | 27.9 28.5 | 3.0 3.0 | 100.0 100.0 |
| 19651. | 66.4 | 30.7 | 2.8 | 100.0 |

[^110]

## Section 2.-Expenditures on Personal Health Care

Expenditures made on personal health care services, for the purposes of this Section, include the amounts spent by hospitals and the amounts received by physicians, dentists, pharmacists for prescription services, and by other paramedical professionals in the provision of health care and treatment directly to individuals. No attempt is made to include expenditures on public health, or public or private capital expenditures such as the building or extension of hospitals or other health facilities. Also excluded are the cost of administration of public health programs and other technical services as well as the cost of administering voluntary profit or non-profit health insurance plans. On the other hand, expenditures by the three levels of government on behalf of individuals are included.

Canadians spent an estimated $\$ 2,194,000,000$ in 1964 on personal health care, which is two and a half times the $\$ 870,000,000$ they spent in 1955 . The annual rates of increase varied from 8.0 p.c. in 1962 to 13.6 p.c. in 1956, their average being 10.8 p.c. The per
capita expenditure, which was $\$ 55.40$ in 1955 , rose to $\$ 105.73$ in 1963 and an estimated $\$ 114.04$ in 1964 . The population increase during the period was 22.5 p.e.

The proportion of the gross national product represented by expenditures on personal health care was 3.2 p.c. in 1955 and 4.7 p.c. in 1964 . Thus, one in every $\$ 21$ of production in Canada in 1964 was for personal health care goods and services as compared with one in every $\$ 31$ nine years previously.

Payments received by physicians and surgeons for providing personal medical care services comprise about 23 p.c. of total expenditures on personal health care, and amounted to almost $\$ 494,000,000$ in 1964.

## 2.-Expenditures on Personal Health Care, 1355-64

Nore.-Figures exclude expenditures on pablic health and expenditures for capital purpose9.

| Year | Hospital Services |  |  |  |  | Physicians Services | Prescribed Druge ${ }^{4}$, | Dentists' Services | Other ${ }^{5}, 6$ | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Active Trestment | Mental ${ }^{2}$ | Tuberculosis: | Federal ${ }^{\text {d }}$ | $\underset{\text { Hospitals }}{\text { All }}$ |  |  |  |  |  |
|  | \$ 0000,000 | \$'000,000 | \$000,000 | 000,000 | \$ 0000,000 | \$ 0000000 | \$'000,000 | \$ 000,000 | \$ 000,000 | \$ 000,000 |
| 1955. | 342.4 | 68.9 | 29.9 | 88.8 | 480.0 | 206.5 | 59.5 | 68.6 | 55.0 | 869.6 |
| 1956. | 380.8 | 77.6 | 30.6 | 40.8 | 529.8 | 240.1 | 71.8 | 81.5 | 85.0 | 988.2 |
| $1957 .$. | 422.8 | 87.5 | 31.0 | 45.3 | 586.7 | 271.0 | 84.5 | 87.3 | 70.0 | 1,099.5 |
| 1958.. | 462.3 542.6 | 90.0 111.6 | 30.4 29.6 | 48.4 50.3 | 640.1 734.1 | 300.5 324.7 | 90.3 106.5 | 98.1 100.1 | 85.0 95.0 | $1,214.0$ $1,360.4$ |
| 1959. | 542.6 | 111.6 | 29.6 | 50.3 | 734.1 | 324.7 | 106.5 | 100.1 | 95.0 | 1,360.4 |
| 1960. | 625.2 | 120.2 | 30.1 | 53.9 | 829.4 | 353.9 | 107.3 | 112,4 | 105.0 | 1,508.0 |
| 1961.. | 714.8 | 132.8 | 29.9 | 56.8 | 934.3 | 387.1 | 111.4 | 118.8 | 115.0 | 1,866.6 |
| $1962 .$. | 802.4 | 141.7 | 29.5 | 60.1 | 1,032.7 | 404.6 | 113.1 | 123.8 |  | 1,800.2 |
| 1963. | 899.7 | 158.9 | 28.4 | 62.9 | 1,149.9 | 451.7 | 128.5 | 134.8 | 135.0 | 1.997 .9 |
| 1964 . | 993.7 | 180.0 | 27.0 | 65.9 | 1,266.6 | 493.9 | 136.0 | $152.0{ }^{5}$ | 145.0 | 2,183.5 |

${ }^{1}$ Includes gross expenditures of publie and private acute, chronic and convalescent hospitals in 1955-57 and, in non-participating provinces, in 1958 -60; includes gross expenditures of budget review and contract hoepitals in 1961-64 and, in participating provinces, in 1958-60; excludes expenditures of mental, tuberculosis and federal hospitals. 2 Lncludes gross expenditures of public and private bospitale; excludes expenditures of federal hospitals. ${ }^{2}$ Includes acute, chronic, convalescent, mental and tuberculosis hospitals of the Department of National Health and Welfare and the Department of Veterans Affairs; excludes hospitals of the Department of National Defence, ${ }^{4}$ Sold by retsil drugstores only. ${ }^{5}$ Estimated. Includes estimated expenditures for services of private duty nurses, chiropractors, osteopaths and optometrists; excludes all employees of hospitals. years.

## PART IV-NATIONAL VOLUNTARY HEALTH AND WELFARE ACTIVITIES

A number of national voluntary agencies carry on important work in the provision of health and welfare services, planning research and education, supplementing the services of the federal and provincial authorities in many fields and playing a leading role in stimulating public awareness of health and welfare needs and in promoting action to meet them. The functions of twenty important voluntary agencies are described in the 1962 Year Book at pp. 270-274.

Voluntary Medical Insurance.-About $11,700,000$ Canadians, or 61 p.c. of the population of Canada, had voluntarily secured some protection against the costs of physicians' services at the end of 1964 . This protection was provided by 62 non-profit plans with an enrolment of $6,450,000$, and 79 private companies giving coverage to an estimated $5,260,000$ persons. The total was $5,800,000$ above the 1955 figure, which represented only 40 p.c. of the population.

The non-profit plans took in about $\$ 186,000,000$ in premiums and $\$ 4,200,000$ in other revenue in 1964 , paid out $\$ 173,000,000$ in benefits and $\$ 13,400,000$ for administration, and were left with a surplus of approximately $\$ 3,800,000$. Thus, for every dollar
of premiums, 93 cents were paid out in benefits, which amounted to approximately $\$ 26.98$ per person covered. In 1955, benefit payments had been $\$ 41,400,000$, representing 89 cents of the premium dollar and amounting to only $\$ 13.17$ per person.

Profit-making private companies wrote $\$ 119,700,000$ of premiums for health protection in 1964 ; they paid out $\$ 92,000,000$ in claims.

## PART V--VETERANS SERVICES*

The Department of Veterans Affairs administers most of the legislation known collectively as the Veterans Charter and also provides administrative facilities for the Canadian Pension Commission, which administers the Pension Act and Parts I to X of the Civilian War Pensions and Allowances Act; for the War Veterans Allowance Board, which administers the War Veterans Allowance Act and Part XI of the Civilian War Pensions and Allowances Act; and for the Secretary General (Canada) of the Commonwealth War Graves Commission.

The principal benefits now available to veterans are medical treatment for those eligible to receive it, land settlement and home construction assistance, educational assistance for the children of the war dead, veterans insurance, general welfare services, unused re-establishment credit, disability and widows pensions and war veterans allowances. The work of the Department, except the administration of the Veterans' Land Act, is carried out through 17 district offices and five sub-district offices in Canada and one district office in England; the benefits of the Veterans' Land Act are administered through seven district offices and 25 regional offices across Canada.

As part of the Department's continuing policy to cherish the memory of Canada's war dead, ceremonies were held in France in June-July 1966, commemorating the fiftieth anniversary of Canadian participation in the Battles of the Somme 1916, and honouring the dead of these and other battles. June 11-17 in Centennial Year will be Veterans Week, during which the Government and veterans organizations across Canada will conduct activities to feature the contributions, achievements and sacrifices of the Canadian citizen-in-arms.

## Section 1.-Pensions and Allowances

## Disability and Dependants Pensions

Canadian Pension Commission.-The Canadian Pension Commission administers the Pension Act (RSC 1952, c. 207, as amended) and Parts I to X of the Civilian War Pensions and Allowances Act (RSC 1952, c. 51, as amended). Its members are appointed by the Governor in Council and it reports to Parliament through the Minister of Veterans Affairs. The Commission has district offices in principal cities across Canada with a Senior Pension Medical Examiner in charge and also is represented by a Senior Pension Medical Examiner in London, England, located in the district office of the Department of Veterans Affairs in that city. (See also p. 131.)

The Pension Act.-Previous issues of the Year Book contain information on the development of Canadian pension legislation together with yearly statistics of numbers and liabilities.

The Pension Act makes provision for the payment of pensions in respect of disability or death resulting from injury or disease incurred during or attributable to service with the Canadian Navy, Army or Air Force in time of war or peace. Provision is also made for supplementing, up to Canadian rates, awards of pension to or in respect of Canadians for disability or death suffered as a result of service in the British or Allied Forces during World War I or World War II, or payment of pension at Canadian rates in cases where

[^111]the claim has been rejected by the government of the country concerned. The annual rates for a 100 -p.c. disability for all ranks up to and including that of Colonel and equivalent rank are:-

|  | \$ |
| :---: | :---: |
| Pensioner. | 2,400 |
| Wile. | 768 |
| One child. | 360 |
| Two ebildren. | 624 |
| Each additional child. | 216 |

For assessments lower than 100 p.c., the awards are proportionately less. The rate of personal pension is higher if the pensioner held a rank higher than Colonel or equivalent rank at the time the disability was incurred, but the additional pension for wives and children remains the same for all ranks. Attendance allowance, which is payable to a pensioner who is totally disabled, helpless and in need of attendance, and which varies from a minimum of $\$ 480$ to a maximum of $\$ 3,000$ a year depending on the degree of attendance required, is paid in addition to pension. Although a pensioner must be totally disabled to receive this allowance, the disability resulting in the need of attendance may be non-pensionable.

The annual rates of pension for widows and children of all ranks up to and including that of Colonel and equivalent rank are:-

| Widow | 1,824 |
| :---: | :---: |
| One child. | 720 |
| Two children. | 1,248 |
| Esch additional child. | 432 |

Rates for widows are higher if the deceased veteran held a rank higher than that of Colonel or equivalent rank, but those for children remain the same for all ranks.

The Civilian War Pensions and Allowances Act, Parts I to X, provides for the payment of pensions to or on behalf of persons who served in certain civilian groups that were closely associated with the war effort during World War II and who suffered injury or death as a result of such service; these include merchant seamen, saltwater fishermen, auxiliary services personnel, ferry pilots of the RAF Transport Command, firefighters who served in Britain, etc.
1.-Pensions in Force under the Pension Act, as at Dec. 31, 1965

| Service | Disability |  | Dependant |  | Disability and Dependant |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Pensions } \\ & \text { in } \\ & \text { Force } \end{aligned}$ | Liability | $\begin{gathered} \text { Pensions } \\ \text { in } \\ \text { Force } \end{gathered}$ | Liability | $\begin{gathered} \text { Pensions } \\ \text { in } \\ \text { Force } \end{gathered}$ | Liability |
|  |  | \$ | No. | \$ | No. | \$ |
| World War I. | 34,405 | 35,563,007 | 14,114 | 24,893,860 | 48,609 | 60,456,867 |
| World War II. | 108,396 | 93,692,522 | 15,934 | 24,198,215 | 122,830 | 117,888,737 |
| Pescetime. | 2,070 | 1,443,336 | 602 | 1,218,485 | 2,572 | 2,662,821 |
| Epecial Force. | 1,829 | 1,408,838 | 184 | 293,542 | 2,013 | 1,702,380 |
| Totals. | 144,750 | 132, 107,703 | 30,834 | 54,043,102 | 175,624 | 182,710,805 |

## War Veterans Allowances and Civilian War Allowances

War Veterans Allowance Board.-The War Veterans Allowance Board is a quasijudicial body consisting, at present, of nine members appointed by the Governor in Council. The Board administers the War Veterans Allowance Act and Part XI of the Civilian War Pensions and Allowances Act and reports to Parliament through the Minister of Veterans

Affairs. The Board acts as an appeal court for an applicant or recipient aggrieved by a decision of a District Authority and may, on its own motion, review and alter or reverse any adjudication of a District Authority. The Board is also responsible for instructing and guiding the District Authorities in the interpretation of policy and for advising the Minister with respect to Regulations concerning the administration of the Act.

War Veterans Allowance District Authorities.-In 1950, 18 District Authorities were established in the regional districts of the Department of Veterans Affairs and granted full power to adjudicate on all matters arising under the War Veterans Allowance Act. In 1960, a separate Authority, the Foreign Countries District Authority, located in Ottawa, was established to look after recipients living outside Canada. The members of a District Authority are employees of the Department of Veterans Affairs appointed by the Minister with the approval of the Governor in Council.

War Veterans Allowances.-The purpose of the War Veterans Allowance Act, 1930 is to provide an allowance to otherwise qualified war veterans who, because of age or infirmity, are no longer able to derive their maintenance from employment and to ensure that their income does not fall below the scale specified in the Schedule to the Act. Widows and orphans of recipients of the allowance are eligible for benefits. Since its inception the Act has been amended on 13 different occasions to meet additional needs of veterans and their dependants. The most recent amendments, passed in 1965, incorporated into the Act the increased monthly rates and annual ceilings authorized under the Appropriation Act effective Sept. 1, 1964, and granted service eligibility to allied veterans who served overseas in the Imperial or Allied Forces during World War I, in Britain only, provided they were domiciled in Canada at the time of joining such forces. This is the same service eligibility now enjoyed by former members of His Majesty's Canadian Forces. The amendments allowed for further exemptions in property and income and provided for administrative improvements. Veterans of the Canadian, Commonwealth and Allied Forces may obtain the benefits provided under the Act if their war service, age or incapacity, residence and financial circumstances meet the prescribed requirements. An otherwise qualified applicant or recipient is allowed to own personal property not exceeding $\$ 1,250$ if single, and $\$ 2,500$ if married and may also have an interest of up to $\$ 10,000$ in his residence. The present monthly rates and the maximum total annual income ceilings are:-

| Item | $\begin{gathered} \text { Monthly } \\ \text { Rate } \end{gathered}$ | Annual <br> Income Ceiling ${ }^{1}$ |
| :---: | :---: | :---: |
|  | \% | \$ |
| Single. | 94 | 1,586 |
| Married. | 161 | 2,664 |
| One orpban. | 60 | 1,008 |
| Two orphans.. | 105 | 1,808 |
| Three or more orphans. | 141 | 2,016 |

${ }^{1}$ Where a recipient or spouse is blind, the income ceiling is $\$ 120$ higher.
At Apr. 30, 1966, there were 85,672 recipients of War Veterans Allowances, made up of 55,771 veterans, 29,585 widows and 316 orphans; 665 of the total resided outside Canada. The annual liability for all recipients was $\$ 95,587,683$.

Civilian War Pensions and Allowances.-Part XI of the Civilian War Pensions and Allowances Aet makes available to certain groups of civilians, their widows and orphans, benefits similar to those available to veterans under the War Veterans Allowance Act. These groups, which performed meritorious service in World War I or World War II, are: Canadian merchant seamen of both Wars; non-Canadians who served in Canadian merchant ships in either War; Canadian voluntary aid detachments of World War I; Canadian
firefighters of World War II; Canadian welfare workers of World War II; Canadian transatlantic aircrew of World War II; and Newfoundland Overseas Forestry Unit of World War II.

Service for at least six months at sea or overseas in the group concerned is the prime requisite for eligibility as to service. VADs in World War I are required to have served on the Continent of Europe or for at least 365 days in Britain prior to the Armistice. A pensioner under Parts I to X of the Act is also eligible. The monthly rates and the maximum total annual income ceilinge are identical to those in the War Veterans Allowance Act. At Apr. 30, 1966, there were 1,076 civilians, 247 widows and 10 orphans in receipt of Civilian War Allowances, a total of 1,333 recipients of whom five were residing outside Canada. The 1965-66 liability for all recipients was $\$ 1,799,960$.

## Veterans' Bureau

The Veterans' Bureau, which is a branch of the Department of Veterans Affairs, assists former members of the Armed Forces and their dependants and former members of the various auxiliary organizations in preparing and presenting claims to the Canadian Pension Commission; it has been in operation for 35 years. The Chief Pensions Advocate, who heads the Bureau at Ottawa, is assisted by pensions advocates, most of whom are lawyers located in the departmental district offices. The pensions advocates appear as counsel for applicants before Appeal Boards of the Commission and, in addition, advise pensioners and applicants upon any provision of the Pension Act or phase of pension law or administration that may have a bearing on pension claims. No charge is made for the services of the Bureau.

During 1965, the Veterans' Bureau submitted 6,795 claims to the Canadian Pension Commission for adjudication, of which 36 p.c. were wholly or partially granted. These included 1,218 claims presented to Appeal Boards of the Commission. During the year, 1,365 straight entitlement claims were submitted to the Commission, based on service in World War I and peacetime, of which 203 were wholly or partially granted; claims based on service in World War II and Korea numbered 3,183 , of which 1,083 were wholly or partially granted; and of the 1,029 miscellaneous claims submitted, 610 were wholly or partially granted.

## Section 2.-Welfare Services

Welfare services for veterans and, where appropriate, their dependants are provided by the Welfare Services Branch. These include the administration of assigned statutes; the conducting of field work and reporting for other branches of the Department, the Canadian Pension Commission, the War Veterans Allowance Board and Services Benevolent Funds; and the provision of a rehabilitation and welfare program of advice and counselling including referral, where indicated, to other public or private agencies, veterans organizations, etc.

War Service Grants.-War service gratuities payable under the War Service Grants Act to veterans of World War II and the operations to restore peace in Korea are now payable only in cases where delayed application is acceptable. Re-establishment credit payable under the same Act is available up to Oct. 31, 1968. Payment of the credit, except for a balance of $\$ 50$ or less, is not made in cash to the veteran but is released on his behalf for specified purposes. Up to the end of 1965 a total of $\$ 315,220,832$ had been paid out and unused balances amounted to $\$ 8,637,352$. During 1965 the total paid out amounted to $\$ 241,732$ made up of $\$ 127,021$ for purchases of homes and for repairs and furniture; $\$ 20,735$ for purchases of businesses, tools and equipment; and $\$ 93,976$ for miscellaneous items such as insurance, special equipment for training, elothing, etc.

Assistance Fund.-Recipients of benefits under the War Veterans Allowance Act and Part XI of the Civilian War Pensions and Allowances Act living in Canada may be given help from the Assistance Fund if their total income is lower than a stated maximum. Assistance may take the form of a monthly supplement based on shelter, fuel, food, clothing, personal care and specified health costs or of a single award to meet an unusual or emergency need. The number of persons assisted during 1965 was 21,050 , the number in receipt of monthly supplements at the end of the year was 15,736 and the Fund expenditures for the year amounted to $\$ 5,489,826$; comparable figures for 1964 were $20,513,15,519$ and $\$ 3,758,105$, respectively.

Education Assistance to Children.-The Children of War Dead (Education Assistance) Act provides help in the form of allowances and the payment of fees for the post-secondary education of children of those whose deaths have been attributed to military service. Assistance is restricted to children attending, in Canada, educational institutions which require secondary school graduation, matriculation or equivalent standing for admission. These include, in addition to universities and colleges, such facilities as hospital schools of teaching and institutes of technology. From its inception in July 1953 to the end of 1965 , expenditures totalled $\$ 5,391,428$, of which $\$ 2,779,0+7$ was spent in allowances and $\$ 2,612,381$ in fees. By the end of 1965, 3,793 children of Canada's war dead had been approved for training. Of these, $1,429 \mathrm{had}$ successfully completed training- 194 had obtained degrees in arts and science, 244 in education, 102 in engineering and applied science, 29 in social work, 21 in medicine, 21 in law, 99 in other university faculties, 367 in nursing, 204 in teaching and 148 in administrative and technological fields. At the same date there were 647 university undergraduates and 233 students in non-university courses receiving assistance.

Veterans Insurance.-The Returned Soldiers Insurance Act (SC 1920, c. 54 as amended) provides eligibility to contract for life insurance with the Federal Government up to a maximum of $\$ 5,000$ to any one veteran of World War I. No policies were issued after Aug. 31, 1933. There were 48,319 policies issued during the eight years in which the Act was open amounting to $\$ 109,299,500$ and, of these, there were 6,631 in force with a value of $\$ 14,245,209$ on Dec. 31, 1965.

The Veterans Insurance Act (RSC 1952, c. 279 as amended) enables veterans following their discharge and widows of those who died during service to contract with the Federal Government for a maximum of $\$ 10,000$ life insurance. Veterans with active service in Korea were extended eligibility by virtue of the Veterans Benefit Act 1954. The period of eligibility to apply for this insurance will cease Oct. 31, 1968. To Dec. 31, 1965, 53,287 policies in the amount of $\$ 173,722,000$ had been issued and, of these, 28,299 policies with a value of $\$ 90,054,148$ were in force.

Rehabilitation and Welfare.-Welfare officers at Departmental District Offices work closely with other branches of the Department, with other public agencies at all levels and with private agencies and organizations in assisting veterans and their dependants to deal with problems of social adjustment, particularly those associated with physical disabilities or the disabilities of increasing age. The latter occur more frequently, of course, as the age of the veteran population increases. Vocational rehabilitation is promoted through training assistance available to disability pensioners and through close collaboration with the federal Department of Manpower and Immigration and provincial rehabilitation and re-training facilities. Sheltered workshops operated at Toronto and Montreal and home assembly work in other centres produce poppies and memorial wreaths and crosses associated with Remembrance Day observances. Finished products are sold to the Dominion Command of the Royal Canadian Legion.

## Section 3.-Treatment Services

Treatment Activity.-The Treatment Services Branch of the Department of Veterans Affairs provides medical, dental and prosthetic services for entitled veterans throughout Canada as authorized by the Veterans Treatment Regulations. Service is also provided for members of the Armed Forces, the Royal Canadian Mounted Police, and the wards of other governments or departments at the request and expense of the authorities concerned.

It is the responsibility of the Branch to provide examination and treatment to disabled pensioners for their pensionable disabilities, and to provide treatment to war veterans allowance recipients (but not their dependants), veterans whose service and need make them eligible for domiciliary care, and veterans whose service and financial circumstances render them eligible for free treatment or at a cost adjusted to their ability to pay. If a bed is available, any veteran may receive treatment in a Departmental hospital on a guarantee of payment of the cost of hospitalization. The pensioner receives treatment for his pensionable disabilities regardless of his place of residence but service to other veterans is available in Canada only. Where Departmental facilities are not readily accessible, an eligible veteran may obtain treatment at the expense of the Department in an outside hospital from a doctor of his choice.

Under the federal-provincial hospital insurance program, DVA hospitals are recognized for the provision of insured services to veterans. Any necessary premiums are paid on behalf of veterans in receipt of war veterans allowance. The Veterans Treatment Regulations remain the authority for the treatment of veterans (and others) in DVA institutions and elsewhere under Departmental responsibility, regardless of whether or not the hospitalization is at the expense of the insurance plan.

Hospital Facilities.-Treatment is provided in 11 active-treatment hospitals located at Halifax, N.S.; Saint John, N.B.; Quebec City, Montreal and Ste. Anne de Bellevue, Que.; Toronto and London, Ont.; Winnipeg, Man.; Calgary, Alta.; and Vancouver and Victoria, B.C.; and also in a health and occupational centre at Ottawa, Ont., and in two domiciliary care homes at Saskatoon, Sask., and Edmonton, Alta. The rated bed capacity of these institutions at Dec. 31, 1965 was 8,823 beds. It should also be noted that in Ottawa both acute and chronic cases that require definitive treatment are admitted to the National Defence Medical Centre. An additional 571 beds are available in veterans pavilions situated at St. John's, Nfld., Regina, Sask., and Edmonton, Alta. Pavilions are owned by the Department but are operated by the parent hospital, and medical staffs are provided by the Department.

Medical Staff and Training Programs.-Many of the professional staffs of Departmental active-treatment hospitals are employed on a part-time basis; in the main they are recommended for appointment by the Deans of Medicine of the universities with which the hospitals are affiliated. Most members of the medical staffs are engaged in teaching and private practice and hold appointments on the medical faculties of the various universities. In the active-treatment institutions, medical teaching programs are maintained, which are considered essential to attract highly qualified professional men and thus ensure the highest quality of medical care. All active-treatment hospitals have been approved by the Royal College of Physicians and Surgeons of Canada for postgraduate teaching in medicine and surgery, and the majority are also approved for advanced postgraduate training in various other specialties. An extensive intern-resident program is in effect in the medical specialties as well as in other fields such as physiotherapy, occupational therapy, dietary, psychology and medical social services. A school for the training of nursing assistants, operated at Camp Hill Hospital in Halifax. has an annual capacity of 70 and graduates are offered employment in other Departmental hospitals. A program of postgraduate and continuing education in pharmacy is conducted, in conjunction with the School of Pharmacy of the University of Toronto, at Westminster Hospital, London, Ont.

Medical Research.-During 1965, there were 92 projects in progress under the clinical research program. This program is varied but in the main deals with conditions affecting aging, which the Department is in a special position to investigate. Self-contained clinical investigation units have been set up in active-treatment hospitals located at Montreal, Toronto, London, Winnipeg and Vancouver.

## Section 4.-Land Settlement and House Construction

The Veterans' Land Act, enacted in 1942 and broadened extensively in scope and financial provisions since then, provides financial, technical and supervisory assistance to World War II and Korean Force veterans to enable them to engage in agriculture on a full-time or part-time basis; to acquire and operate commercial fishing establishments; to acquire, build or improve homes; and to settle on provincial, federal and Indian reserve lands. The Act was last amended in June 1965. Provision was made for substantially higher ceilings in the various categories of loans-from $\$ 20,000$ to $\$ 40,000$ for full-time farmers on economic farm units, from $\$ 12,000$ to $\$ 18,000$ for small family farmers, from $\$ 10,800$ to $\$ 16,000$ for small holders (part-time farmers) and from $\$ 12,000$ to $\$ 18,000$ for veterans building houses. These amendments make the financial assistance available under the Act comparable to that available to non-veterans under the Farm Credit Act and the National Housing Act. Other amendments provide for the financing of secondary enter-prises-farm equipment repair shops, tourist facilities, etc.-for the small family farmers; the payment of related debts "reasonably incurred"; the embodiment of the balance of previous loans in new farm loans; and the authority for the Director to assist veterans in the initial financing of an establishment by the repayment of re-establishment credit or rehabilitation grants.

Since inception and up to Dec. 31, 1965, 101,297 veterans have been settled under the provisions of the Act. Of this total, 30,463 were established as full-time farmers, 58,091 as small holders, 5,559 as Crown land settlers, 1,313 as commercial fishermen; 1,674 Indian veterans were established on reservations and 4,197 veterans had homes built on city-size lots. Subsequent to settlement, 11,836 farmers and 6,438 small holders and commercial fishermen were provided with additional financial assistance. In 1965, over $\$ 37,000,000$ was approved on behalf of 5,373 veterans. From the commencement of opera-

Financial, technical and supervisory assistance, provided under the Veterans' Land Act, has enabled more than 30,000 veterans to become successful full-time farmers.

tions to the end of 1965 , over $\$ 690,000,000$ was spent on repayable loans, advances and non-repayable grants. As at Dec. 31, 1965, more than 53,000 veterans had earned conditional grants in excess of $\$ 97,000,000$. Since inception and up to the end of $1965,30,651$ veterans had titles to property released to them-11,385 farmers, 13,190 small holders, 414 commercial fishermen, 4,252 Crown land settlers and 1,410 Indian veterans residing on reservations.

Advisory, supervisory and appraisal field services are provided by a staff of farm credit advisers, settlement officers, field officers and construction supervisors, who are highly trained in the techniques pertaining to agriculture, construction and land appraisal. During 1965, 4,174 properties were appraised- 1,262 farms, 2,852 small holding and commercial fishing establishments and 60 bare land appraisals. In addition, 1,046 new houses were started- 968 small holdings and 78 on city-size lots-and 1,011 new houses were completed. Six construction schools were organized which were attended by 187 veterans.

Continued interest is shown in the Veterans' Land Act group life insurance. By Dec. 31, 1965, 7,130 veterans were covered by insurance to an amount in excess of $\$ 51,000,000$. Since the group plan was first introduced, 23 insured veterans have died and $\$ 130,000$ has been paid to retire their indebtedness; the total paid in premiums to the end of 1965 was $\$ 432,950$.

Veterans continue to maintain a favourable record of repayment. Instalments falling due in 1965 amounted to over $\$ 18,000,000$, excluding share-of-crop payments. During the year, almost 97 p.c. of the total amount due was collected and the 1,240 veterans under share-of-crop agreements paid over $\$ 1,400,000$.

## 2.-Summary of Operations under the Veterans' Land Act, as at Dec. $\mathbf{3 1 , 1 9 6 5}$

| Item | $\begin{gathered} \text { Full- } \\ \text { Time } \\ \text { Farming } \end{gathered}$ | Small <br> Holding | Com. mercial Fishing | Provincial Lande | Federal Lands | Indian <br> Reserves | CitySize Lots | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Settlements made........... . No. | 30.463 | 58,091 | 1,313 | 5,005 | 554 | 1,674 | 4,197 | 101,207 |
| Additional loans made....... "A | 11,836 | 6,438 |  |  | - |  |  | 18,322 |
| Total loans made. | 42,299 | 64,529 | 1,361 | 5,005 | 554 | 1,674 | 4,197 | 119,619 |
| Publie funds spent. . . . . . . . . . $\$ 0000$ | 240. 105 | 391,666 | 6,322 | 11,009 | 1,200 | 8,741 | 37,641 | 691,684 |
| Conditional grants earned. . . . No. | 21,931 | 25,133 | 798 | 3,970 | 382 | 1,410 |  | 53,524 |
| Titles relened to veterans \$'000 | 45,620 | 37,448 | 1,452 | 9,048 | 660 | 3,095 | - | 97,321 |
| Titles released to veterans... No. | 11,385 | 13,190 | 414 | 3.970 | 282 | 1,410 |  | 30, 961 |
| Accounts under adminiatration" | 14,010 | 33,807 | 708 | 836 | 143 |  | 103 | 50,6791 |
| Houses built. ............. " | 2,408 | 25,691 | 315 | 1,460 | 131 |  | 4,124 | 34, 129 |
| Houses under construction.... " | 86 | 701 | 6 | 13 | - | - | 73 | 879 |

${ }^{1}$ Includes 1,572 civiliad purcbaser secoumts.

## Section 5.-Commonwealth War Graves Commission

The current Charters of the Commonwealth War Graves Commission consist of two documents-the Original Charter of Incorporation dated May 21, 1917 and the new Supplemental Charter dated June 8, 1964. Under these Charters the Commission is entrusted with the marking and maintenance in perpetuity of the graves of those of the British Empire and Commonwealth Armed Forces who lost their lives between Aug. 4, 1914 and Aug. 31, 1921 and between Sept. 3, 1939 and Dec. 31, 1947 and with the erection of memorials to commemorate those with no known grave.

The Canadian High Commissioner in London, England, is the official Commission member for Canada, the Minister of Veterans Affairs is the Agent of the Commission in Canada, and the office of the Secretary-General of the Canadian Agency is in the Veterans Affairs Building, Ottawa.

## CHAPTER VII.-EDUCATION

## CONSPECTUS

|  | Page |  | Pate |
| :---: | :---: | :---: | :---: |
| Part I.-Formal Education | 337 | Subsection 4. Advit Education. | 364 |
| Section 1. The Current Education SitdATION. | 337 | Part II.-Cultural Activities Related to Education. | 365 |
| Section 2. Adminigtration and Organization of Education........ | 338 | Section 1. The Arts and Education... | 365 |
| Section 3. Statibtice of Schools, Univerbities and Colleges. <br> Subsection 1. Elementary and Secondary | 350 | Section 2. The Educational and Cudtoral Functiong of the Canadian Broadcasting Corporation and the |  |
| Subsection 1. Elementary and Secondary Schools. | 355 | National Film Board... | 373 |
| Subsection 2. Universities and Colleges. | 358 | Section 3. The Canada Counctl | 375 |
| Subsection 3. Vocational Education..... | 363 | Stetion 4. Library Services. . . . | 377 |

The interpretation of the symbols used in the tables throughout the Year Book will be found on $p$. viii of this volume.

## PART I.-FORMAL EDUCATION*

## Section 1.-The Current Education Situation

The Canadian education scene in the mid-1960s continues to be dominated by the need for the development of ever greater knowledge, skills, understanding and appreciation among the nation's youth in order to prepare them, individually and as a community, for the challenges they are expected to face in the future. It is widely recognized that this need should be met not only by developing still further the élite at the top of the academic pyramid but also by extending the base to include all young persons, whatever their abilities and aptitudes and whatever their social circumstances and financial resources.

The findings of systematic research as well as the sometimes bitter experiences of schoolmen have brought about an increased realization of the great diversity in aptitude patterns among young people. If all are to be educated so that individual potential may be fully realized, it follows that there must be an equal diversity in the prograns of study or training. Facilities for those of academic and scholarly inclination have existed for many years so that recent emphasis has been placed upon the provision of programs suited to those of more practical bent and to the introduction of other measures designed to hold students within the formal education systems to ever-increasing levels of age and attainment. The chart on p. 338 shows the extent to which such measures have been successful. The modern-day labour force has little use for the untrained and poorly educated young person but is greatly in need of qualified tradesmen, technicians and professionals. For this reason there has been an upsurge in the building of vocational and composite schools, the establishment of community colleges and the introduction of policies and practices to cope more adequately with individual differences, such as non-graded systems, subjectpromotion schemes and the extension of guidance facilities.

Efforts are also being made to overcome the financial barriers to continuing education. The investigations of demographers and sociologists are confirming and quantifying the

[^112]long-held suspicions that financial constraints are operating to deny education to many Canadians who could profit from it. Various methods are therefore being sought to lighten the financial burden upon the individual and to equalize the rapidly increasing load being carried by the taxpayer. It is now evident that the Federal Government has a key role to play in this matter, particularly in technical and vocational training and in university education-both matters of prime concern to the nation as a whole. Acknowledgement of this fact is to be seen in the increasing activities of the Technical and Vocational Training Branch of the federal Department of Manpower and Immigration, the formation of a federal office to deal with higher education, the founding of a nation-wide Service for Admission to Colleges and Universities, the holding of an interprovincial Ministers' conference on education and manpower, and renewed attempts to introduce uniform methods of statistical reporting.

Thus it appears that ethical considerations concerning the duties of society in the satisfaction of the personal needs of the individual and economic considerations concerning the kinds of individuals required to satisfy the manpower needs of society are combining to encourage the extension and equalization of educational opportunity. The rising costs

> ESTIMATED STUDENT RETENTION TO SPECIFIED LEVELS OF EDUCATION, $$
1960 \text { AND } 1965
$$


of this endeavour are causing a reappraisal of traditional methods of financing education, tending toward the assumption of increasing proportions of the load by higher levels of government. Taken along with other developments in the economic, social and cultural life of the community, this is resulting in the emergence of the federal authority as an important partner in the task of providing for the education of Canadians.

## Section 2.-Administration and Organization of Education

## Responsibility for Education in Canada

Canada is a federal state, in which responsibility for the organization and administration of public education is exercised by the provincial governments. The Federal Government is directly concerned only with the provision of education for certain special groupssome 138,000 Indians, about 6,000 Eskimos, other children in the Territories, inmates of federal penitentiaries and families of members of the Armed Forces on military stations (although whenever possible provincial educational facilities are used). In addition, the Federal Government makes grants for vocational training, provides per capita grants to each province to be divided among its universities and colleges, participates to a considerable extent in informal education and makes grants-in-aid for research personnel and equipment that assist educational institutions indirectly.

Because each of the ten provinces has the authority and responsibility for organizing its education system as it sees fit, organization, policies and practices differ from province to province. Each has a department of education, beaded by a minister who is a member of the Cabinet. Ontario has, in addition, a Department of University Affairs under its Minister of Education. Each department is administered by a deputy minister, or director, who is a professional educationist and a public servant. He advises the minister, supervises the department and gives a measure of permanency to its edu a ation policy, in general carries out that policy, and is responsible for the enforcement of the Public School Act. The department of education usually also includes: a chief imspector of schools and his staff of local inspectors; directors or supervisors of curricula, technical education, teacher training, home economics, guidance, physical education, audio-visual education, correspondence instruction and adult education; directors or supervisors of other sections (according to the needs of the particular province); and technical personnel and clerks. Quebec operates a dual system, with an associate deputy minister for each of the Roman Catholic and Protestant sectors. In Newfoundland, which has a public denominational system, there is a superintendent for each one of the five denominations recognized by the School Act.

Other provincial departments having some responsibility for operating school programs are: departments of labour, which operate apprenticeship programs; agriculture departments, which operate agriculture schools; departments of the attorney-general or of welfare, which operate reform schools; and departments of lands and forests, which operate forest ranger schools.

From the beginning each department of education has undertaken, among other things, to provide: (1) inspection services to ensure maintenance of standards; (2) the training and certification of teachers; (3) courses of study and lists of prescribed or approved textbooks; (4) financial assistance to local authorities in the construction and operation of schools: and (5) regulations for the guidance of trustees and teachers. In return, each department requires regular reports from the schools. When first introduced, government grants to schools were based on such factors as the number of teachers, enrolment, days in session and attendance. Somewhat later, special grants were introduced in most provinces to meet a variety of expensea, such as the construction of the first achool, the organizing of
special classes, providing transportation for pupils, school lunches and other contingencies. A number of provinces made provision for equalization grants, and now the majority have a foundation program of one kind or another.

The work of the departments of education has grown considerably. Many have expanded their services in the fields of health, audio-visual aids, art, music, agriculture, special education, correspondence courses and prevocational and trade courses. At the same time there has been an increasing delegation of authority to local boards and school staffs. One illustration of this tendency is a reduction in the number of departmental (external) year-end examinations. Few provinces now provide for more than one or two such examinations-at the end of the final and, in some cases, also at the end of the second last year of the secondary school course. Another illustration is the increasing use of approved lists of textbooks from which local authorities may make their own choice, instead of lists of prescribed texts. Courses of study are now seldom planned only by one or two experts in the department; instead they result from conferences and workshops including active teachers and other interested individuals or bodies. In most provinces "curriculum construction" is considered to be a continuous procedure.

## Local Units of Administration

In all provinces, school laws provide for the establishment and operation of schools by local education authorities, which operate under the Public School Act and are held responsible to the provincial government and resident ratepayers for the actual operation of the local schools. Through the delegation of authority, education becomes a provinciallocal partnership with the degree of decentralization reviewed intermittently. Questions concerning the allocation of responsibilities between the provincial and local authorities will probably occupy the minds of Canadians for decades to come, as well as problems such as the optimum size of administrative units, schools and classes.

At one time, the provincial departments delegated authority to publicly elected or appointed boards, which functioned as corporations under the School Acts and regulations. These three-man boards were expected to establish and maintain a school, select a qualified teacher and prepare a budget for presentation to the municipal authorities. As towns and cities developed, the original boards remained as units but provision was made in the legislation for urban school boards with more members and generally (although not always) with responsibility for both the elementary and secondary schools.

Rural school districts were typically about four miles square, their size determined largely by the need for the school to be within walking distance of the homes it served. As time went by the realization grew that the manner of living was changing, that farms were becoming much larger and more mechanized, that most farmers had trucks and automobiles, that there were fewer children to the square mile and that it would be more efficient and economical to provide central schools and transportation. There was also considerable discontent among the teachers, as security of tenure was rarely found under the three-man local school boards. Further, the shortage of teachers, differences among the districts in their ability to pay for education, and a demand for secondary school facilities in rural areas all combined to force the establishment of larger administrative units.

Under provincial legislation, larger units are now in effect in Nova Scotia, New Brunswick, Saskatchewan, Alberta and British Columbia, and their establishment is being encouraged and promoted in Newfoundland, Prince Edward Island and Manitoba. (Newfoundland is a somewhat special case in which the denominational school districts, already rather large geographically, are proceeding toward some kind of amalgamation of provision of joint services.) Ontario has abolished the local school sections in favour of township school areas and is now beginning to promote reorganization into county units with responsibility for both elementary and secondary education. In Quebec, the greater part of the Protestant system is organized into larger units and the Catholic system has recently completed a reorganization of its administrative structure (for secondary education) into 55 regions.

In some provinces the local boards disappeared when the larger units were formed; in others they were retained with limited powers and duties. The larger unit boards accept responsibility for providing the necessary staff, buildings, equipment and transportation. Where local boards remain, they usually function in an advisory capacity, and look after the buildings and grounds.

## Elementary and Secondary Education

Enrolment in elementary and secondary schools has been increasing year by year until, in 1964-65, there were 4,972,000 pupils enrolled in public schools, 200,000 in private schools and 70,000 in various vocational schools and courses, both public and private.

Each September, most Canadian children of age six enter an eight-grade elementary school. At about 14 years of age, nearly 90 p.c. of those who entered grade 1 enter a regular four- or five-year secondary school. From the graduates at this level, a limited number-about 13 p.c. of those who began school-go on to college or university where rather more than half of them pursue a three- or four-year program leading to a bachelor degree in arts or science and the remainder enrol in various professional courses such as commerce, education, engineering, law, medicine, theology, etc.

The 8-4 plan leading from grade 1 to university was for many years the basic plan for organizing the curriculum and schools, other than those of Catholic Quebec. This plan, although still followed in some rural, village, town and city schools, has been modified from time to time in various provinces, cities or groups of schools, as it appeared inadequate to meet the demands arising from new aims of education. There are a number of variants to be found at present in Canada: the addition of one or even two kindergarten years at the beginning of the system; the addition of an extra year to high school, providing five rather than four years of secondary schooling; the introduction of jumior high schools, changing the organization to a 6-3-3 or 6-3-4 plan; or again, the combining of the first six years of elementary school into two units, each designed to reach certain specified goals during a three-year period. A fairly recent innovation is the establishment of junior colleges, affiliated with universities, in which the last one or two years of high school and the first one or two years of college are offered.

The first secondary schools were predominantly academic and prepared their pupils for entry into university. Until recent years, vocational schools were to be found only in the large cities, although schools in some of the smaller centres did provide a few commercial and technical subjects as options in the academic curriculum. Today, besides commercial and vocational high schools, there are, in increasing number, composite and regional high schools that provide courses in home economics, agriculture, shop-work and commercial subjects as well as in the regular secondary school subjects. The number of subjects offered has also increased greatly and the number of options available, particularly in certain provinces, provides a wide choice for pupils with a great variety of abilities and aims. Three programs can frequently be distinguished-the university entrance course, the general course for those who wish to complete an academic type of program before entering employment, and vocational courses for those who wish to enter skilled trades. Thus, attention is given to the minority who will go on to institutions of higher learning, while the majority, who will look for jobs, are prepared for entry to their chosen occupation. Considerable emphasis has been placed on music, art, physical education, guidance and group activities but not at the expense of the basic subjects that provide a general foundation.

## Education In the Catholic Schools of Quebec

Although Catholic education in Quebec has been considered sufficiently different to warrant a separate description, it is conducted after much the same fashion as education in the other provinces. All types of schools familiar to Canadians elsewhere are to be found in Quebec, including ungraded rural elementary schools, graded urban schools, secondary schools with academic bias, vocational schools and, at the top, universities. The administrative structure of school boards, inspectors and central departmental officials is also broadly similar. Such differences as exist are of historical origin and arise out of the
traditional French-Canadian conception of education, which involved the belief that the greatest contribution by French Canadians to Canada's future could be made by preserving their language and culture, that religion should be an integral part of education, that boys and girls were best educated separately, that education was a privilege and that those who were considering entering the professions might make such a decision at the end of the elementary school. Education was regarded as a means of producing good citizens by training boys to become bread-winners and girls to become home-makers.

A unique feature of the Quebec Catholic system is the existence of the colleges classiques which, operated by religious orders, serve by affiliation as the arts faculties of the Frenchlanguage universities. They accept students who have completed grade 7 and provide an eight-year course leading to the baccalaureat and entrance to certain university faculties. Out of the scholarly traditions of this system has arisen the cultural and professional élite in law, medicine, theology and the arts in French Canada.

The political, social and economic ferment of the present decade is being reflected in education and is resulting in rapid and complex changes in the organizational structure and in curriculum content. Government functions previously scattered among several departments have been brought together under a new department of education, created in 1964. The new department took upon itself the task of completely reorganizing education in the province, introducing new policies and practices, many of them on the recommendation of the Royal Commission on Education, establisbed in 1961 under the chairmanship of Monsignor Alphonse-Marie Parent. The assessment of resources required to meet present and future needs was seen as one of the prime tasks; a directorate of planning was set up and newly created regional school commissions were assigned planning functions. It was evident that Quebec was behind most other provinces in the provision of education for a technological age, and so the early concern has been with the expansion of facilities for relating the educational process to the world of work-the building of school plant, the establishment of consultative committees with the trades and professions, and the promotion of guidance and counselling in the schools.

Regulations have been announced providing for the introduction of a six-year elementary program, in general with promotion according to age, and a five-year secondary course with a highly diversified curriculum and a subject-promotion scheme. Pre-university and professional education is to be offered for a further two and sometimes three years at special institutes to be established for the purpose. Other major changes involve the departmental examinations system, teacher training, the establishment of regional offices of the department, and many financial provisions, including arrangements with private schools for the payment of fees and increased availability of bursaries and scholarships.

Newfoundland.-The topographical and economic circumstances of the Island influenced the development of education as did pockets of settlers establishing themselves in outposts which were relatively self-sufficient. Active leadership of the churches and homogeneity of the village populations provided a minimum of overlapping of denominations except in a few industrial areas or the larger cities. A Royal Commission is considering the efficiency of the present organization with a view to increasing the education level of the Island's population.

The present system is predominantly denominational although there are amalgamated and community schools operated by the Department of Education. The schools are administered on a local basis by the five largest denominational groups-Roman Catholic, Anglican, United Church, Salvation Army and Pentecostal Mission. These operate under five superintendents, each in charge of the schools of his faith, and a member of the Department. Local boards, including the local clergymen as members, select teachers, pay salaries from government grants and look after the achool property. All schools follow the provincial course of atudy and examinations, scholarships and diplomas are determined by an interdenominational body representing the major denominations and the Department.

Education in the Yukon and Northwest Territories.-In the Yukon Territory, the school system is operated by the Territorial Government through a superintendent and staff at Whitehorse responsible to the Commissioner of the Territory who, in turn, receives instructions from the Minister of Indian Affairs and Nortbern Development in Ottawa. The Education Division of the Northern Administration Branch of the Department of Indian Affairs and Northern Development offers advice on education policy to the Minister and Territorial authorities. All schools, both public and separate, with the exception of the Carcross Indian Residential School (operated by the Department in co-operation with the Territorial Government) and St. Mary's School (a quasi-private school operated by the Roman Catholic Church in Dawson) come under the direct ownership and operation of the Government of the Yukon Territory. Although there is provision for three types of schools in the Yukon-public, separate and Indian-most of the Indian children attend either the public or the separate schools. In 1965, the population was 15,000 of whom 2,400 were Indians. By choice, the schools of the Yukon follow the British Columbia education curricula.

In the Northwest Territories (the Districts of Mackenzie, Franklin and Keewatin) the school system is operated by the Education Division of the Northern Administration Branch of the Department of Indian Affairs and Northern Development by agreement with the Government of the Northwest Territories. The Federal Government, as the operating agency, finances school operation and receives from the Territorial Government the pupil cost for pupils who are neither Indian nor Eskimo. Enrolment for the 1965-66 term included 2,987 Eskimos, 1,285 Indians and 2,924 others, a total of 7,196 in the Northwest Territories and Arctic Quebec combined. Yellowknife public and separate school districts and Hay River separate school district are financed partly by local taxation and partly through grants-in-aid from the Federal and Northwest Territorial Governments. Inspection and supervisory services are provided by the Education Division. Alberta education curricula, subject to increasing modifications, are prescribed for the schools of the Northwest Territories. Expansion is taking place in school accommodation and basic elementary and secondary education is being provided for all children in the Territories and for Eskimo children in oorthern Quebec, as well as vocational training for them and for young adults showing interest, and special aptitude. The program, which is an integrated one for the children of all races in the North, provides for the construction of schools and student residences, curricula designed for a northern environment, bursaries and other atudent aids, and special vocational training projects appropriate to both local craftsmanship and mechanical trades in such fields as construction, transportation and mining.

## Special Education

Interest is increasing in the education of exceptional children-those who deviate so far from the normal as to require special educational facilities. New types of special classes are sometimes started by parents of children with a common disability, who band together to provide help and show the need for such service, which is then taken over by public bodies. Progress in providing such education varies from province to province. It is most commonly found in the city school systems; in rural areas there is usually little provision for the child who needs special attention, except for those who are admitted to residential institutions. There are six schools for the blind, 13 schools for the deaf and a number of training schools for mental defectives. Special classes are found in tuberculosis sanatoria, mental hospitals and reformatories. In many cities, there are classes for the hard-of-hearing, the partly blind and other physically and mentally handicapped children and a few for the highly gifted.

## Teachers

All provinces require candidates for elementary school teacher certificates to have high school completion or better, with at least one year of professional training in a faculty of education or a teachers' college. The training usually consists of professional and academic coursea, and some time spent in practice teaching. High school teachers are generally
university graduates who have taken an additional year of profeasional training in a college of education, or who have graduated with a degree in education. The trend is for the government departments of education to give the universities responsibility for the training of elementary school teachers as well as secondary school teachers. In Newfoundland, Prince Edward Island, Manitoba, Alberta and British Columbia all teacher training is conducted at the university, where three or four different courses leading to a degree are provided. About three quarters of the time is devoted to academic courses in arts and science and the remainder to professional courses. In some of the other provinces, close contact is maintained between teacher training college and university.

In 1964-65 there were 122 normal schools and teachers' colleges and 26 faculties or colleges of education engaged in teacher training with a total enrolment approaching 38,000 . In the same year there were 191,000 full-time teachers in the public elementary and secondary schools throughout the 10 provinces and 12,000 in the private schools.

Most teachers in these schools are paid according to a local salary sehedule based on years of training and experience; they contribute to a provincial superannuation scheme and are members of a provincial professional organization. In 1964-65 about 66 p.c. of them were women, of whom a little more than half were married. The median salary of all teachers and principals in the nine provinces other than Quebee was $\$ 4,954$, an increase of 4.9 p.c. over the previous year. Apart from teachers in Quebec concerning whom adequate data were not available, about 11 p.c. of those in elementary schools and about 72 p.c. of those in secondary schools had university degrees.

## Higher Education

Out of the two distinct cultures upon which the Canadian nation is founded have arisen two somewhat different systems of higher education. One, originally patterned on the French system before the secularization of higher education in France with the majority of the institutions under control of Catholic orders or groups, has in recent years adapted more and more to North American traditions but still retains distinctively French characteristics. The other was originally designed more according to English, Scottish and United States practices, instruction being given in English and controlled by a variety of groups-religious denominations, governments and private non-denominational bodies. Institutions comprising a third small group and giving instruction to both English-speaking and French-speaking students are operated or controlled mainly by Catholic groups, although the first such bilingual institution to be established-the University of Ottawawas reorganized in 1965 under a non-denominational board of governors.

Large universities, with numerous faculties and provision for graduate study in many fields, are comparatively recent phenomena. Until the middle of the nineteenth century, higher education in Canada included little more than arts and theological training. From that time, more instruction in science and certain professional fields was gradually introduced. Graduate studies, to judge by the number of earned doctorates, did not acquire numerical importance until after 1920. Only for the past 20 years or so have more than 100 earned doctorates been granted annually.

Civil legislation regarding the establishment of new institutions, or changes in existing ones, is usually enacted by provincial legislatures, except for federal military colleges and a few institutions originally established by Act of the Canadian Parliament. Once an institution is legally chartered, control is vested in its governing body, the membership of which is indicated in the charter. The line of authority runs from the board of governors through the president (or recteur) to the senate and deans and the faculty as a whole.

The composition of the board of governors varies according to the type of institution. Provincial universities normally have government representation; church-related institutions have clergymen. Nearly all boards have either direct representation from the business community, alumni associations and other organizations, or are advised by these groups through advisory boards or committees. The size of the board varies from a very few to over forty. It has ultimate control of the university and normally reserves to
itself complete financial powers, including the appointment of the president and most other staff. On occasion there will be faculty representation on the board and recently there have been attempts on the part of faculty groups of many institutions to obtain greater representation on the boards of governors. Responsibility for academic affairs is usually delegated to the senate. Composed mainly of faculty members, although there may also be alumni and representatives of non-academic groups included, it is responsible for admission, courses, discipline and the awarding of degrees.

Although there are variations, most students enter a university or the cours collegial of a college classique after the completion of from 11 to 13 years of elementary and secondary schooling. In from three to five years, courses of instruction lead to a bachelor's degree in arts, pure science, and such professional fields as engineering, business administration, agriculture, and education. Courses in law, theology, dentistry, medicine and some other fields are longer-usually requiring for admission completion of part or all of a first-degree course in arts or science. For those pursuing graduate studies and research, the second degree is normally the master's or licence-at least one year beyond the first degree-and the third is the doctorate, normally requiring at least two additional years beyond the second degree.

There are about 400 institutions of higher education in Canada, of which about 50 have degree-granting powers (not including about a score that confer degrees in theology only). Full-time enrolment in the fall of 1965 was 201,000 , a 13 -p.c. rise over the previous year. The tremendous increase in demand for university places in recent years has resulted in a rapidly intensifying crisis in the financing of higher education, and a commission under the chairmanship of Dean Vincent Bladen of the University of Toronto was set up in 1963 by the then Canadian Universities Foundation, now the Association of Universities and Colleges of Canada, to study the financing of higher education in Canada. The Commission presented its report in the fall of 1965; among its recommendations were many referring to increased federal support for the universities.

In addition to the full-time university-grade enrolment mentioned above, almost as many students are enrolled at the pre-matriculation level or are taking university-grade courses on a part-time basis, whether in the evenings, during summer session or by correspondence. In 1964-65 over 33,000 students graduated with first degrees or equivalent diplomas, over 4,000 graduated at the master level, and 569 earned Ph.D. or equivalent doctoral degrees.

## Adult Education

A variety of opportunities is provided to adults for further academic, vocational and cultural experiences beyond the regular full-time school system for young people. Each province has developed its own programs, operated mainly by local school boards and provincial universities and supplemented by independent universities and private organizations. The Federal Government sponsors some adult education programs and provides grants-in-aid to the province for others. Co-ordination of these programs is secured tbrough voluntary associations at national and provincial levels.

In 1964-65, total course enrolment in adult education (as defined by UNESCO) was well over $3,000,000$. Two thirds of the enrolment was in professional and vocational training, including university-sponsored refresher courses and technical, trade, agricultural and business courses, under various auspices. Another 18 p.c. was in health and social education courses, including courses in marriage preparation, citizenship training, first-aid, water safety, child care, nutrition, and courses designed to assist in the treatment or prevention of specific diseases. Academic courses leading to a high school diploma or university degree accounted for nearly 8 p.c. of the total enrolment and fine arts and other cultural subjects for the remainder.

A survey of participants in further education, taken in 1960 using a 1-p.e. sample of the population 15 years of age or over, indicated that a typical student was male, married, about 31 years of age, had completed secondary schooling and had worked in a clerical or similar occupation.

Many public and private institutions and organizations also sponsor informal public lectures, film showings, guided tours, musical and dramatic performances and similar activities of an educational nature for adults. Workshops, conferences and residential adult education, as well as regular courses, help to prepare those who staff these activities.

## How Education Costs are Met

In 1964, about 8 p.c. of Canada's total national income was spent on formal education. Almost 19 p.c. of all municipal, provincial and federal revenue went for education and of the amount so spent, the municipalities provided 32 p.c. and the provinces 45 p.c.

As stated on p. 340, the actual operation of public elementary and secondary schools is in the hands of the local elected or appointed school boards which determine the budgets and therefore the amount of taxes required for school purposes. In most cases, these taxes are levied and collected for the boards by the municipalities; however, in those areas where there is no municipal organization the school boards have the power to levy and collect taxes for school purposes. At present, local governments provide about half of the cost of operating the public schools, provincial grants provide over 46 p.c. and the remainder is obtained from various other sources. Except in Newfoundland, fees are almost nonexistent. Four provinces-British Columbia, Alberta, Manitoba and Nova Scotia-pay operating grants on an equalization formula and thus ensure at least a minimum level of education throughout the province; the standard is determined either in terms of so much per pupil, or from an established salary scale for teachers with a prescribed teacher-pupil ratio, or by some combination of these.

In Newfoundland where municipal organization scarcely exists outside certain larger centres, there are three school-tax areas (centres). Consequently only about 1.2 p.c. of school revenue is provided by local taxation; the province provides about 87 p.c. and most of the remainder is paid by parents in the form of fees. In Prince Edward Island where there is no municipal organization outside of the cities of Charlottetown and Summerside, the school boards levy and collect property and poll taxes but the province provides about two thirds of the operating costs. Ontario and Saskatchewan make use of various equalization and incentive grants and New Brunswick uses a combination of a basic grant per pupil and special grants. Most provinces provide grants for school buildings and equipment, establish loan funds, and guarantee debentures for school purposes and assist in selling them.

In 1964, universities and colleges received 62 p.c. of their current operating funds from provincial governments and the Federal Government, 25 p.c. from fees, 3 p.c. from endowments and gifts and 10 p.c. from a variety of other sources. Private schools and colleges are normally supported by student fees, endowment income, and gifts and support from sponsoring bodies.

## Trade and Technical Education and Training

Increasing use of automated processes in business and industry is resulting in a shrinking market for unskilled and semi-skilled workers. Early school dropouts are finding it increasingly difficult to find suitable employment and many are now trying to acquire in their adult years the general education or training in the skilled trades that they missed in their youth. Those persons still in the regular school system are tending to remain longer and go farther in the system, partly because of the changing attitudes of society toward education and partly for economic reasons.

Hand in hand with this growing demand for better educational facilities, educators are striving to provide comprehensive programs at all levels to meet the needs not only of the university-bound but also of the great majority who require adequate preparation for early entry into the labour force. It is now accepted that vocational education for adults as well as for youths is a public responsibility which must be provided, as needed, throughout man's working life. Education of this nature is of national concern and has a direct impact upon material prosperity, the national economy and the standard of living.

The pattern of vocational education in Canada varies from province to province and there are variations within the provinces. However, there are three basic types of institute offering vocational education-secondary achools, trade schools and post-secondary institutes of technology. Many municipal school boards provide vocational courses as part of the regular secondary school program in technical or composite-type schools. Students in these schools get some general vocational training or training in certain specific fields, such as typing or auto-mechanics, along with instruction in general academic or cultural subjects.

Trade schools, on the other hand, are open only to those who have passed the provincial school-leaving age and have left the regular school system. These schools offer specialized training and their purpose is to develop competent tradesmen. Courses at the trade level do not usually require high school graduation; the grade level demanded, which varies according to province or trade, ranges from grade 8 to grade 12.

The third type, the institutes of technology, operate at a higher level of training. Earolment in the institutes presupposes high school graduation or at least high school standing in such relevant subjects as mathematics and the sciences. Graduates from institutes of technology are awarded diplomas of applied arts or diplomas of technology and form an essential link between professional engineers or administrators on the one hand and qualified craftemen on the other. Most of the institutes of technology and trade schools across Canada are provincially operated.

In addition to the vocational education and training provided by these three types of publicly operated schools, many private business colleges and trade schools offer a wide variety of business, trade and technical courses, some through correspondence. Vocational education is also carried out under a system of apprenticeship training. Such training is given mainly on the job, with classes taken at the trade schools either during the evening or on a full-time basis during the day for periods ranging from three to 10 weeks a year.

Recognizing the importance of a high level of occupational and technical competence in the economic development of the country, the Federal Government through the Technical and Vocational Training Branch of the Department of Manpower and Immigration assists the provinces in the development of programs of technical education at different levels-for youth preparing to enter the labour market, for trade and other occupational training and re-training of adults (pre-employment and up-grading courses), and for advanced technical training. To this end, the Technical and Vocational Training Assistance Act was passed by the Federal Government in 1961 to provide financial assistance to the provinces for vocational training. The following specific measures were agreed upon by the federal and provincial governments: (1) a capital assistance program; (2) nine other programs covering technical and vocational high school training, technician training, trade and other occupational training, training in co-operation with industry, training of the unemployed, training of the disabled, training of technical and vocational teachers, training for federal departments and agencies, and student aid; and (3) an Apprenticeship Training Agreement.

The need for further research into the whole field of manpower needs prompted the later addition of a tenth program to the nine mentioned under (2) above. This programmanpower requirements and manpower training research-is designed to stimulate and encourage research projects undertaken in the provinces for providing information relating to technical and vocational training and manpower requirements, including the improvement of training programs and methods and the determination of manpower requirements. The federal contribution is 50 p.c. of provincial expenditures.

The capital assistance program, under which the Federal Government pays 75 p.c. of the provincial expenditure up to a specified total for each province, has given a tremendous impetus to the development of training facilities. During the period Apr. 1, 1961 to Mar. 31,1966 , projects valued at over $\$ 1,102,000,000$ were approved, which, when all completed, will provide a total of 352,145 new places for students, most of whom will be enrolled in two- or three-year courses. These included the construction of 455 new high schools with facilities for vocational training plus major additions to 116 such schools; construction of 70 new trade schools and enlargement of 91 existing trade schools; and construction of 18 new technical institutes plus major additions to 20 existing institutes. In addition, 129 minor projects were undertaken involving extension to existing schools. The additional facilities are summarized by province as follows:-

| Province or Territory | New Schools | Major Projects Involving Additions to Existing Schools | Minor Projects Insolving Additions to Eristing Sckools | New <br> Student Places |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. |
| Newfoundland.. | 13 | 1 | 2 | 3,570 |
| Prince Edward Island. | 2 | - | 6 | 1,486 |
| Nova Scotia.. | 7 | 8 | 1 | 2,838 |
| New Brunswick. | 6 | 8 | 32 | 2,645 |
| Quebec. | 122 | 67 | 7 | 73.214 |
| Ontario.. | 291 | 71 | 25 | 181,618 |
| Manitobs. | 4 | 17 | 47 | 5,602 |
| Saskatehewan. | 10 | 6 | - | 10,784 |
| Alberts., | 48 | 16 | 4 | 34,242 |
| British Columbia. | 41 | 86 | 5 | 35,634 |
| Yukon Territory.. | 1 | 1 | - | 482 |
| Northwest Territories. | - | 1 | ー | 30 |
| Totals. | 543 | 227 | 129 | 352, 145 |

In addition to assisting financially with the provision of physical facilities for training, the Federal Government shares in the operating costs of the various programs conducted under the Technical and Vocational Training Agreements, including the Apprenticeship Training Agreement. These programs are closely correlated with the common objectives of training the country's labour force at all levels below university and in all fields.

Of particular concern is the need to up-grade both the educational and vocational competence levels of those already in the labour force. The Federal Government undertakes to share the expenditures made by employers in developing and operating approved training programs for their employees, particularly basic training for skill development, re-training of technologically displaced persons, and apprenticeship training; higher level and other training projects are also encouraged. A Manpower Consultative Service has been established to assist industry with problems encountered in the fields of manpower training and employment and to take part in the manpower research program.

A limited survey of organized training programs for apprentices, technicians, firstline supervisors and skilled tradesmen in such fields as manufacturing, transportation and communications, mining, quarrying and oil wells, and public utilities was conducted by the Dominion Bureau of Statistics in 1963 in co-operation with the Economics and Research Branch of the Department of Labour. Results revealed that almost 17 p.c. of the establishments surveyed conducted some organized training programs, with an incidence of 8 p.c. for establishments employing from 15 to 50 persons and 25 p.c. for those with 50 or more employees. In addition to the establishments that reported some form of organized program for their staffs, many others indicated that they gave tangible encouragement to individual employees by contributing to the payment of fees for courses or by other means.

## Federal Contributions to Education

Some 24 Federal Government departments or agencies contribute in one way or another to education. Interest in education in the provinces by the Federal Government stems from its realization of the contribution of schooling to production, services and trade, and the benefits from research. The chief contributions are therefore sums or grants to assist the provincial departments with their vocational programs and grants to the universities. The University Grants Program is administered by the Association of Universities and Colleges of Canada with amounts based on a rate of $\$ 2$ per head of population (increased to $\$ 5$ for the school year 1966-67), the provincial portions being allocated to the universities according to their full-time enrolment. The student loans program is operated under the Canada Student Loans Act (SC 1964, c. 24), assented to July 28, 1964, when $\$ 40,000,000$ was set aside to enable full-time students to borrow up to $\$ 1,000$ annually, interest-free for five years-the $\$ 5,000$ or less to be repaid with interest commencing six months after the student has graduated. The loan scheme is operated by the chartered banks with the students being approved for loans by the universities and institutes of technology. The Federal Government guarantees the loans and pays the interest while the student is attending college. The amount allocated will be increased year by year in proportion to the increase in the number of persons $18-24$ years of age; in $1965-66$ it was $\$ 00,000,000$.

Under the Technical and Vocational Assistance Act (SC 1960-61, c. 6), the Federal Government, until 1975, contributes 75 p.c. of the total spent by a province on buildings and equipment for approved projects as determined under the agreements between the federal and provincial governments which cover some ten programs. These programs cover high school vocational classes, trade schools, institutes of technology, organized training on-the-job, apprenticeship, rehabilitation, management education, etc. (see also p. 347). As already mentioned (p. 348), the capital expenditure for vocational training in the provinces during the period Apr. 1, 1961 to Mar. 31, 1966 totalled over $\$ 1,102,000,000$; of this amount, over $\$ 620,000,000$ came from the federal coffers.

The Federal Government through the Canada Council in 1957 provided an amount of $\$ 100,000,000$, half of which was to be distributed among the universities for specified building and equipment purposes, similar to the distribution of grants. Interest from the remaining $\$ 50,000,000$ was to be used to assist in the development of the arts, humanities and social sciences mainly through scholarships (see pp. 375-376).

Other contributions are more indirect and include scholarships, research grants and reports or services of value to the school. Research grants are made by the National Research Council, the Defence Research Board, the Department of National Health and Welfare, the Department of Manpower and Immigration and other agencies. Some Departments such as Agriculture, Health and Welfare, etc., provide materials and publica-
tions of value in the school programs and the National Museum, the National Gallery, the National Film Board and the Canadian Broadcasting Corporation contribute directly or indirectly to various achool programs (see pp. 365-377).

More directly, the Federal Government is responsible for the education of the Eskimos, Indians and white persons in the Territories (see p. 343), the Indians on the reserves, prisoners in penitentiaries, members of the Armed Services and their dependants and inservice training for permanent personnel. It also assists in citizenship training and other out-of-school informal education activities.

External Aid.-Some 11,000 full-time university students, a large proportion of them in the graduate schools, come to Canada each year from many countries; the largest number are from the United States although the number from Commonwealth and other countries is increasing very rapidly. The external enrolment in 1965 represented about 5.5 p.c. of the total enrolment. The number of such students is now about double the number of Canadians studying abroad. (See Table 9, p. 359.)

Canada's External Aid Office is responsible for the operation and administration of external assistance programs, including educational assistance to Commonwealth and other countries. In the academic year 1965-66, such assistance consisted of 439 teachers including teacher college personnel, 101 university staff members sent out individually or in teams, and 435 (calendar year 1965) technical advisers in vocational education, health and welfare, government administration and other areas as well as the provision of such services as television facilities, film units, farm forums and radio broadcasts. More than 5,000 persons under the UN agencies and Commonwealth scholars have been trained in Canada since 1950; the number enrolled in 1965-66 was 2,538 , almost double the 1,412 in 1964-65. The objective of this training is the development of an indigenous training capability in the emerging countries and persons trained in Canada are expected to return to their homelands to convey their skills to others either in educational institutions or in informal situations.

From 1960 to 1965 Canada's expenditures abroad on capital projects in aid of education amounted to about $\$ 7,000,000$. Capital assistance includes the building and equipping of educational institutions and the provision of Canadian staff for a number of years. This staff is replaced by native persons after they receive appropriate training in Canada. The construction of a trades training centre in Ghana is an example of this type of project. Other major projects include Canada Hall, a residence for the University of the West Indies in Trinidad; technical equipment to schools in Malaysia and Tanganyika; and audio-visual equipment, handicraft supplies and other teaching aids to various countries.

In 1965-66, under the Commonwealth Scholarship and Fellowship Plan which began in 1960, some 222 Commonwealth students were brought to Canada (see also p. 179).

Canada has a number of voluntary agencies interested in aiding students from other countries, several of which receive some assistance from the Federal Government. Among these are the Canadian University Service Overseas, the African Students Foundation and the World University Service of Canada.

## Section. 3-Statistics of Schools, Universities and Colleges

Elementary and secondary schools may be classified as either publicly controlled or private. The publicly controlled schools include: the public and separate schools under local school boards-by far the most numerous group; provincial schools which at this
level are limited mainly to trade achools, correspondence courses, and special schools for the blind and deaf; and federal schools for Indians, for children in the Northwest Territories, and for the children of members of the Armed Forces overseas. Private schools may be academic, business (commercial), trade, technical, correspondence or even a combination of these.

Institutions of higher education may be provincial, church, independent universities and colleges, or federal military colleges. In addition there are institutes of technology, teachers' colleges, theological institutions and schools for such specialized fields as nursing, agriculture, paper-making, fisheries, graphic and fine arts, languages, etc. Some of these are provincial and some private.

Most organized classes for adults operate under the auspices of universities, colleges, local school boards, churches or community organizations.

Table 1 shows full-time enrolment at all levels each year for the period 1956-57 to 1965-66 and Table 2 shows the number of schools, teachers and pupils for all types of education institutions, classified by province, for the school year 1964-65. In all types of schools the number of pupils has been increasing. The increase was first noticed at the elementary level some six years after the birth rate began to rise during the war years. About eight years later the children born during the War were entering high school and four years later they began entering university. The number of teachers is rather closely related to the number of students although the trend is toward larger classes. On the other hand, the number of schools has remained fairly constant, the increase caused by the construction of new and larger schools in urban areas being counterbalanced by the closing of many one-room rural schools.

## 1.-Full-Time Enrolment in Elementary and Secondary Schools, and in Universities and Colleges, School Years 1356-57 to 1965-68



[^113]
## 2.-Schools, Teachers and Enrolment for All Types of Education Institutions, by Province, School Year 1964-65

| Item | Nfid. | P.E.I. | N.S. | N.B. | Que. | Ont. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. |
| Hementary and Secendary EducationPublic and Separate-n |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Schools......................... | 1,266 | 432 | 1,025 | 1,113 | 5,1080 | 6,772 |
| Teachers. | 5,351 | 1,168 | 7,638 | 6,577 | 59,010P | 62,291 |
| Pupilis... | 144,129 | 27.787 | 197,486 | 164,124 | 1,311,728p | 1,673,774 |
| Overseas (DND)- |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Teachers. . . . . . . . . . . . . . . . . . | ... | ... | $\cdots$ | $\ldots$ | $\ldots$ | $\ldots$ |
| Pupils.... | ... | ** | ... | $\cdots$ | ... | ** |
| Indian-1 |  |  |  |  |  |  |
| Schools. | - | 1 | 8 | 9 | 25 | 100 |
| Teachers. | - | $\stackrel{2}{43}$ | 33 818 | 25 8.86 | , 1431 | 7,288 |
| Blind- |  |  |  |  |  |  |
| Schools. | - | - | 1 | , | 8 P |  |
| Teschers....... ............... | - |  | 26 |  | \$59 | 36 |
| Pupils (home province)......... | 38 | 7 | 83 | 40 | 284 D | 199 |
| Deal- |  |  |  |  |  |  |
| Schools.. | 二 | 1 | 1 | - | 508 | ${ }^{2}$ |
| Teachers....................... |  | ${ }^{3}$ | 40 |  | 166p | 105 |
| Pupils (home province). . . . . . . . | 50 | 13 | 155 | 115 | 1,025p | 727 |
| Private- |  |  |  |  |  |  |
| Schools.. | 4 | 22 | 24 300 | 111351,791 | $\begin{gathered} 615 \mathrm{D} \\ 6,640 \mathrm{P} \\ 97,507 \mathrm{D} \end{gathered}$ | 2292,81744,470 |
| Pupila.. | 37 | 497 | 8,201 |  |  |  |
| Higher EducationInstitutions. Students (full-time university grade) | 3 | 2 | 16 | 12 | 222 | 65 |
|  | 2,852 | 802 | 8,508 | 5,773 | 59,400 | 50,793 |
| Teacher-TrainingTeachers' Collegea- |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Institutions..... | Z | $\frac{1}{3}$ | ${ }_{3}^{1}$ | 50 | 1071,07212,920 | 112803,475 |
| Students. | - | 79 | 599 | 1,054 |  |  |
| Faculties of EducationFacultiea? | $\begin{array}{r} \frac{1}{22} \\ 1,46 t \end{array}$ | 1246 | 516338 | 318316 |  |  |
| Teachers |  |  |  |  | $\stackrel{141}{2,639}$ | 958 |
| Students ${ }^{\text {2 }}$. |  |  |  |  |  |  |
| Vocational Education-Enrolment- |  |  |  |  |  |  |
| Publicly sponsored vocational courses'. | 4,361 | 507 | 1,943 | 3,403 | 28,625 | 33,033 |
| Trade courses (apprentices) ${ }^{\text {a }}$...... | ${ }^{562}$ | 185 | 1,469 | 2,718 |  | 4.382 |
| Vocational high school courses.. | 421 | 528 | 1,970 | 6,697 |  | 149,378 |
| Post-secondary courses......... | 181 | - | 83 | 270 | 9,904 | 5,545 |
| Private business schools (1963-64) | - | 5 |  | 575 |  | 5,757 |
| Private trade schools ( $1963-644)$. | - | - | 191 | 5 | 8,595 | 3,732 |
| Adult Education- |  |  |  |  |  |  |
| Part-Time Enrolment- |  |  |  |  | $\begin{array}{r} 67,520 \\ 378,976 \end{array}$ | $\begin{gathered} 76,980 \\ 196,775 \end{gathered}$ |
|  | $\begin{aligned} & 2,086 \\ & 3,515 \end{aligned}$ | $\begin{array}{r} 896 \\ 1.590 \end{array}$ | $\begin{array}{r} 9,757,798 \\ 21,298 \end{array}$ | 4,21722,129 |  |  |
| Provincial governmente (1963-64) |  |  |  |  |  |  |

For footnotes, gee end of table.

## 2．－Schools，Teachers and Enrolment for All Types of Education Institutions， by Province，School Year 1944－65－coneluded

| Item | Man． | Sask． | Alta． | B．C． | $\begin{gathered} \text { Y.T. } \\ \text { N.W.T. } \end{gathered}$ | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No． | No． | No． | No． | No． | No． |
| Gementary and Secondary Education－ <br> Publicand Separate－ |  |  |  |  |  |  |
| Pubicand Separate－ | 1，661 | 1．537 | 1，219 | 1，358 | 26 | 21，547 |
| Teachers．．．．．．．．．．．． | 88.975 | 9，996 | 14，702 | 14，879 | 191 | 190，776 |
| Pupils．．．． | 218，770 | 233，213 | 350,906 | 399，944 | 3，842 | 4，725，713 |
|  |  |  |  |  |  |  |
| Schools．．．．．．．．．．．．．．．．．．．．．．．．．． | $\cdots$ | $\cdots$ | $\ldots$ | ．．． | $\ldots$ | 396 |
| Teachers．．．．．．．．．．．．．．．．．．．．．．． | $\cdots$ | ．．＂ | $\cdots$ | $\ldots$ | $\cdots$ | 7.282 |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Teachera．．．．．．．．．．．．．．．．．． | 233 | 221 | 178 | 228 | 5 | 1，337 |
| Pupils．．．．．．．．．．．．．．．．．．．．．．．．．． | 6，069 | 8.475 | 3，836 | 5，924 | 141 | 32，800 |
| Blind - |  |  |  |  |  |  |
| Schools． | － | － | － | 1 | － | ${ }^{6}$ |
| Teachers．， | － | － | 35 | 18 |  | ${ }_{8}^{135}$ |
| Pupils（home province）．．．．．．． | 18 | 26 | 25 | 93 | 2 | 815 |
| Deat－ |  |  |  |  |  |  |
| Schools．． | 1 | 1 | 1 | 1 |  | $\stackrel{13}{4}$ |
| Teachers，．．．．．．．．．．．．．．． | 114 | ${ }_{131}^{26}$ | － 118 | ${ }_{227}^{27}$ | － 8 | 2，683 |
| Pupils（home province）．．．．．．．．． |  |  |  |  |  | 2， |
| Private－ |  |  |  |  |  |  |
| Schools．． | 54 | ${ }_{267}^{25}$ | 337 | ${ }^{1366}$ | － |  |
| Teachers． | 580 11.325 | 267 4,316 | 334 6,292 | 1,181 25,469 | 二 | 12,300 197,915 |
| Higher Education－ |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Institutions ．．．．．．．．．．．．．．．．．．．．． | 11 | 17 | 12 | 10 | － | 370 |
| Students（full－time uaiveresity grade） | 9，172 | 9，603 | 12，977 | 18，557 | － | 178，238 |
| Teacher－Training－ |  |  |  |  |  |  |
| Teachers＇Colleges－ |  |  |  |  |  |  |
| Institutions．．．．．．．．． | 1 | － | － | $\cdots$ | － | 122 |
| Teachers． | 22 | － | － | － | $\cdots$ | 1，463 |
| Students， | 613 | － | － | － | － | 21，740 |
| Faculties of Education－ |  |  |  |  |  |  |
| Faculties ${ }^{\text {2 }}$ ． | ${ }^{2}$ | 2 | 2 | 3 | 二 | 25 |
| Teachers． | 13 | $\begin{array}{r}78 \\ \hline 347\end{array}$ | 114 | 154 | － | 640 |
| Yocational Education－Enrolment－ |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Publicly sponsored vocational |  |  |  |  |  |  |
| Trade courses（apprentices）4．．．．． | 6,542 1,089 | 4， 1,282 | 5，595 | 9，907 4，476 |  | 121， 583 |
| Vocational high school coursea．． | 5，130 | 5，077 | 12，652 | 8，479 | 77 | 190．409 |
| Post－secondary courges．．．．．．．．．． | 517 | 485 | 2，116 | 529 | － | 19，610 |
| Private business sehools $(1963-64\}$ |  |  |  |  | 一 |  |
| Private trade schools（1903－64）．． | ，931 | 1 392 | 1，256 | 889 | － | 15，983 |
| Adutt Etucation－ |  |  |  |  |  |  |
| Part－Time Enrolment－${ }_{\text {U }}$ |  |  |  |  |  |  |
| Universities（1963－64）， | 10，037 | 22，111 | 40，237 | 29，570 | － | 263，411 |
| Provincial governmente （1982－64） | 213，573 | 274，288 | 153．842 | 94，284 | 182 | 1，672，7776 |

[^114]An attempt has been made to tabulate total expenditure on education，including formal education at all levels，vocational training of all types and also expenditure on cultural activities related to education such as adult night classes，fine arts and handicraft courses，and libraries，museums and art galleries．Such expenditure for the year 1962 is presented in Table 3，classified by source．Details of income of school boards for publicly controlled elementary and secondary schools for the years 1961－63 are given at pp．357－358 and financial statistics for universities and colleges at pp．361－362．

## 3．－Expenditure on Formal Education，Vocational Training and Related Cultural Activities，by Source of Funds， 1962

| Type of Education | Taxation | Pro－ Tincial Govern－ ments ${ }^{-}$ | Federal <br> Govern－ ment | Fees | Other Sources | Total Expend－ iture |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \＄＇000 | $8{ }^{+000}$ | \＄000 | ＊ 000 | \％ 000 | \＄${ }^{\prime} 000$ |
| Formal Eilucation－ |  |  |  |  |  |  |
| Elementary and Secondary－ | 738，524 | 753.252 | 153.251 | 4146 |  |  |
| Handicspped outside the pubtic sehoois．． | 211 | 10．616 | ，2s1 | 4，140 | ${ }^{3}, 398$ | 1，02， 11.225 |
| Governsment correspondence schools．．．．．． | － | $1+698$ | － | 685 |  | 2，283 |
| Reform schools ．．．．．．．．．．．． | － | 1，270 |  | － | － | 1，270 |
| Indian and Eskimo educat | － |  | 35，391 |  |  | 35，391 |
| Private schools． |  |  |  | 44，769 | 11，629 | 58，398 |
| Totals．Elementary and Secondary | 738，735 | 786，836 | 188， 642 | 49，600 | 48， 837 | 1，792，450 |
| Teacher－training outside universities． | － | 17，920 | － | 789 | 118 | 18，827 |
| Higher Education－ |  |  |  |  |  |  |
| Current operating expenditure． | 563 | $93,0+8$ | 27，646 | 62，397 | 24，437 | 208，031 |
| Plant expenditure from current funds | 357 | 62，381 | 6，908 | － |  | 69，646 |
| Research in universities． | － | 1，100 | 18，640 | － | 10，885 | 30,625 |
| Scholarships．．． | － | 7，880 | 6，206 | 1 | 5 | 14，072 |
| Other．． | － | 648 | 317 | － | － | 985 |
| Totals，Higber Education | 920 | 165，037 | 65，478 | 62，398 | 35，327 | 329，160 |
| Undistributable expenditu | － | － | 5，672 | － | － | 5，672 |
| Totals，Formal E | 733，655 | 918，709 | 259，792 | 112，787 | 84，08\％ | 2，149，109 |
| Vocational Training－ |  |  |  |  |  |  |
| Technician training． | － | 6，437 | 32，454 | 1，350 | 36 | 40，277 |
| Apprenticeship． | － | 2.936 | 2，643 | 59 | 396 | 6，035 |
|  | － | 8，508 | 30，423 | 603 | 556 | 40，090 |
| Technical and rocational teachers | － | 478 | 238 |  | － | 716 |
| Unemployed． | － | 2.833 | 7，756 | 1 | － | 10， 398 |
| Handicapped．．．．．．．．． | 二 | 874 | 799 | － 2 | 5 | 1．673 |
| Health and welfare personnel．．．．． | 二 | 1，096 | 350 | $-24$ | $-5$ | 1，125 |
| Inmates of reform institutions．．． | 二 | 167 | 350 146 | 二 | 二 | 146 |
| Other vocational training coste． | － |  | 5，397 | － |  | 5，402 |
| Provincial capital expenditures | － | 23，950 |  | 4 | － | 23，950 |
| Private business colleges． | － |  | － | 4，381 |  | 4，381 |
| Totals，Vocational Training | － | 47．084 | 80，205 | 6，418 | 983 | 134，761 |
| Cultural Activities－3 <br> Adult education，including | － |  | 313 |  |  | 2，681 |
| Fine arts． | － | 2，805 | 1，517 | 68 | 8 | 4，199 |
| Hendierafts |  | 293 |  | 2 | 3 | 298 |
| Libraries ${ }^{\text {d }}$ | 17，988 | 5，021 | 734 | － | 1，723 | 25， 468 |
| Archives，museums and art galleries． | ， | 2，594 | 5，641 | － |  | 8.241 |
| National Film Board productions．．． | － | ${ }^{-}$ | 1，378 | 24 | 2 | 1，778 |
| Cultural societies－grants．．．．．．．． | 二 | 458 | 294 569 |  |  | 569 |
| Totals，Cultzral Activities | 17，988 | 13，325 | 10，448 | 99 | 1，752 | 48，816 |

[^115]
## Subsection 1.-Elementary and Secondary Schools

Control.-As stated on p. 339, direct control and operation of public schools is by school boards, which operate under school laws and regulations. School boards may be boards of larger units, local boards within larger units or independent boards for rural schools, towns or cities, the members of which may be all elected, partly elected and partly appointed or all appointed; some schools are operated by trustees appointed by the province in lieu of a board. As their designations imply, private schools are administered by private organizations and federal schools by federal authorities.

Table 4 gives the number of active public school boards and school trustees in each province as at January 1966.
4.-Active School Roards and School Trustees, by Province, as at January 1966

| Province or District | Boards of Larger Units | Local <br> Boards within <br> Larger <br> Units | Independent <br> Boards | Total Boards | School Boards Composed of Trustees who are- |  |  | School Trustees |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | $\stackrel{\text { All }}{\text { Elected }}$ | Some Appointed Elected | $\underset{\text { Appointed }}{\text { Alt }}$ |  |
|  | No. | No. | No. | No. | No. | No. | No. | No. |
| Newfoundland...... | 269 | - | - | 289 | - | - | 269 | 3,500 |
| Prince Edward Igland. | 29 | - | 378 | 407 | 405 | 2 | - | 1,437 |
| Nova Scotia. | 24 | 1,208 | 42 | 1.275 | 1,198 | - | 77 | 4,049 |
| New Brunswick. | 14 | 383 | 39 | 436 | 387 | 9 | 30 | 1,948 |
| QuebeoRoman Catholic. Protestant. . . . . | ${ }_{9}^{55}$ | 1,291 | 109 | 1,455 202 | 1.453 141 | 二 | ${ }_{61}^{2}$ | 7,457 1,014 |
| Ontario. | 980 | 111 | 716 | 1,707 | 1,324 | 49 | 384 | 8,629 |
| Manitoba | 64 | - | 1,069 | 1,133 | 1,116 | - | 17 | 3,930 |
| Saskatchewan. | 60 | 4,385 | 76 | 4,521 | 4,521 | - | - | 13,923 |
| Alberta.... | 58 | - | 138 | 197 | 197 | - | - | 880 |
| British Columbia | 83 | - | 4 | 87 | 87 | - | - | 557 |
| Mackenzie District | - | - | 3 | 3 | 3 | - | - | 11 |
| Totals. | 1,46 | 7,381 | 2,715 | 11,692 | 10,842 | 60 | 750 | 47,336 |

${ }^{1}$ Boards ol Education, all members of Toronto Metropolitan Board.
Enrolment.-Table 5 shows enrolment of all elementary and secondary pupils in Canada and in Department of National Defence schools overseas, and classifies them by grade. Private schools and schools for Indian and Eskimo children are included in these figures. Enrolment in private schools accounted for 4 p.c. of the total 1964-65 enrolment at the elementary and secondary levels. Schools operated by Federal Government departments, that is, schools for Indian children, schools in the Territories and overseas schools for children of Service personnel, accounted for about 1 p.e. of the total.

School enrolment has been increasing in recent years much more rapidly than the general population. Annual rates of increase in total school enrolment for the four most recent years ranged from 4.0 p.c. to 4.2 p.c.; the country's population during the same period increased annually by amounts varying from 1.7 p.c. to 1.8 p.c.

## 5.-Enrolment In Publicly Controlled, Private and Federal Schools, by Grade, School Year 1964-65

| Grade |  | Newfoundland | Prince <br> Edward Islavd | Nove Scotia | New Brunswick | Quebecp | Ontario |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Kindergarten |  | No. | No. | No. | No. | No. | No. |
|  |  | 7,446 | 54 | 18,422 | 89 | 33,253 | 121,347 |
| Grade 1. |  | 15, 136 | 2.933 | 17,863 | 17.600 | 149,051 | 168,035 |
| Grade 2 |  | 15,198 | 2,854 | 18,438 | 17,154 | 146,866 | 156,179 |
| Grade 3. |  | 1f,765 | 2.789 | 18,434 | 16.766 | 145, 230 | 149,008 |
| Grade 4. |  | 14, $8+2$ | 2,753 | 18,701 | 16.496 | 146,969 | 140,450 |
| Grade 5 |  | 14, 195 | 2,677 | 18,055 | 18,822 | 140,471 | 140,415 |
| Grade 6. |  | 13.733 | 2,528 | 17,761 | 15,557 | 126,510 | 134,827 |
| Grade 7. |  | 13.273 | 2,478 | 17.690 | 15.377 | 119,114 | 131,960 |
| Grade 8. |  | 11.139 | 2,488 | 15. 710 | 13,022 | 123,451 | 120,355 |
| Grade 9 |  | 11,355 | 2,485 | 14,288 | 12.586 | 100,901 | 121,325 |
| Grade 10. |  | 7.310 | 1.808 | 11,859 | 10,170 | 83.961 | 106,365 |
| Grade 11. |  | 5,329 | 1.281 | 10, 149 | 7.945 | 62,013 | 88,054 |
| Grade 12. |  | 68 | 949 | 5.282 | 6,131 | 11, 355 | 72,649 |
| Grade 13. |  | - |  |  | 51 | 555 |  |
| Auxiliary. |  | $\begin{array}{r}54 \\ 323 \\ \hline\end{array}$ | 61 209 | 1,225 | 345 490 | 16.655 7.508 | 23, 660 15,312 |
| Totals. |  |  |  |  |  |  |  |
|  |  | 144,166 | 28,327 | 204,515 | 168,601 | 1,418.864 | 1,725,510 |
| Grade | Manitoba | Saskatchewan | Alberta | British Columbia | $\begin{gathered} \text { Y.T. } \\ \text { N.W.T. } \end{gathered}$ | DND Schools Overseas | Canada |
|  | No. | No. | No. | No. | No. | No. | No. |
| Kindergarten. | 6.288 | 3,787 | 892 | 12,457 | 577 | 838 | 205,250 |
| Grade 1....... | 23,755 | 24,386 | 38.220 | 44, 133 | 1,730 | 1,102 | 503.994 |
| Grade $2 \ldots . .$. | 22.475 21.572 | 23,181 22.409 | 36,977 34,322 | 40,553 39,066 | 1,405 | 868 780 | ${ }_{466.386}$ |
| Grade 4. | 21,560 | 22,442 | 35,016 | 37,911 | 1,082 | 660 | 458,882 |
| Grade 5. | 21,433 | 22.451 | 33,512 | 35, 843 | 858 | 583 | 448,315 |
| Grade 6. | 20,263 | 20,872 | $31, \mathrm{C} 01$ | 35, 358 | 709 | 477 | 420,201 |
| Grade 7. | $2 \mathrm{Ca}, 320$ | 20, 500 | 30.708 | 33.807 | 519 | 451 | 408,197 |
| Grade 8. | 17.736 | 18,804 | 28.015 | 33,785 | 479 | 372 | 388, 356 |
| Grade 9. | 17,785 | 18,530 | 26.426 | 32.026 38.625 | 373 265 | 359 319 | 358,419 |
| Grade 10. | 15,482 14.472 | 16,827 14,155 | 22,400 20,786 | 28,625 25,554 | 265 198 | 319 213 | 305, 249.049 |
| Grade 12 | 10,231 | 12,742 | 22,080 | 21, 358 | 138 | 178 | 163, 164 |
| Grade 13. | - 1 | - | - | 3.764 | 11 | 87 | 41. 137 |
| Auxiliary. Special... | 1,538 | 1,435 473 | 113 | 6,034 73 | 11 217 | - | 51,023 28,356 |
| Totals. | 236,174 ${ }^{3}$ | 243,004 | 361,034 | 431,547 | 3,872 | 7,282 | 4,971,693 |

I Includes Ungava District of Quebec.
${ }^{2}$ Total for Yukon Territory was 3.142 pupils.
${ }^{2}$ Inclades 1,259 pupils not classified by grade.

Teaching Staffs.-Between the school years ended in 1945 and 1965 the number of teachers in the publicly controlled schools of the ten provinces increased 150 p.c. from 75,892 to 189,705 . The number of men teachers increased 313 p.c. and the number of women teachers 108 p.c.

In 1965, in nine provinces (excluding Quebec), 85.1 p.c. of the teachers had at least senior matriculation and one year of teacher-training, and an additional 7.8 p.c. had one year less schooling. Median experience in the eight provinces outside of Quebec and Ontario has increased slowly from 7.0 years in 1945 to 8.1 years in 1965, despite the large number of new teachers each year. Many of these have been recruited by the cities, where the median experience has declined from a high of 16.7 years in 1946 to 11.9 years in 1955 and 8.6 years in 1965.

Between 1945 and 1965 the median salary for all teachers in the nine provinces other than Quebec increased 310 p.c. from $\$ 1,207$ to $\$ 4,954$. That for teachers in one-room schools increased 234 p.c. from $\$ 1,019$ to $\$ 3,402$. Naturally, the rate of increase from one year to the next has fluctuated considerably, ranging from 16.8 p.c. between 1947 and 1948 to 2.4 p.c. between 1962 and 1963 . The increase between 1964 and 1965 was 4.9 p.c. as compared with 4.4 p.c. between 1963 and 1964.
6.-Teachers and Principals in Publlely Controlled Elementary and Seeondary Schools, School Year 1964-65

| Province and Sex | Number | Median Salary | Median Experience | $\begin{aligned} & \text { Fully } \\ & \text { Qualified } \end{aligned}$ | University Graduates |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Thaceina Elfmentary Gradeg* |  |  |  |  |
|  |  | \$ | yra. | p.c. | p.e. |
| Newfoundland.............................. M. | 1.233 | 2,575 | 2.7 | 25.4 | 8.5 |
| , F. | 2,987 | 2.602 | 3.5 | 15.2 | 3.2 |
| Prince Edward Ialand. . . . . . . . . . . . . . . . . . . . $\mathrm{F}_{\text {F }}$. | 791 | 3,061 ${ }_{2}$ | 3.8 8.7 | 55.4 20.3 | 12.9 |
| Novs Scotis ................................. . . | 548 | 3,875 | 4.9 | 88.5 | 32.5 |
| Novs | 4,758 | 3,430 | 11.3 | 69.5 | 11.4 |
| New Brunswick. . . . . . . . . . . . . . . . . . . . . . . . M. | 435 | 3,535 | 3.8 | 67.1 | 26.0 |
| New ${ }^{\text {a }}$. | 4,039 | 2,966 | 8.9 | 42.6 | 3.7 |
| Quebrec. | .. | .. | - | - | $\cdots$ |
| Ontario...................................... M. | 11.313 | 5,264 | 5.6 | 95.7 | 22.7 |
| Manitobs | 31,782 1,487 | 4,457 3,889 | 6.9 | 89.7 | ${ }^{6.3}$ |
| Manitoba....................................... $\mathrm{M}_{\mathrm{F}}$. | 1,487 | 3,803 | 7.5 | 88.12 | 14.4 |
| Saskatchewan. . . . . . . . . . . . . . . . . . . . . . . . . . M. | 1,696 | 4,618 | 5.3 | 98.2 | 14.9 |
| , | 5,252 | 4,363 | 7.9 | 97.5 | 36.7 |
| Alberta. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . M. | 1,732 | 5.591 | 6.5 | 94.5 | 41.1 |
| British Columbia, . . . . . . . . . . . . . . . . . . . . . . M. | $\mathbf{7 . 2 1 9}$ $\mathbf{2 . 2 5 6}$ | 4,838 5,794 | 19.0 7.6 | 89.7 96.0 | 10.8 38.4 |
|  | 6,136 | 5,117 | 7.2 | 92.3 | 12.6 |
|  | Teaching Stcondary Gradis: |  |  |  |  |
|  |  | \$ | yT8. | p.c. | p.c. |
| Newfoundland................................ . . . | 777 | 4,423 | 5.7 | 50.3 | 49.3 |
| 为, | 354 | 4.014 | 10.1 | 34.7 | 35.9 |
| Pribce Edward Island. . . . . . . . . . . . . . . . . . . . . M. | 127 | 4,275 | 4.2 | 59.1 | 53.5 |
| Nova Scotia | 144 | 3,756 | 10.0 | 38.9 | 29.9 |
| Nova Scokis.................................... $\mathrm{F}_{\text {F }}$. | 1,131 | 4,888 | 11.7 | 81.8 85.2 | 55.7 |
| New Brunswick. . . . . . . . . . . . . . . . . . . . . . . M. | 1,151 | 8,226 | 6.7 | 59.9 | 53.0 |
| Quebec... F. | 952 | 4,432 | 10.3 | 43.2 | 37.1 |
| Quebee. | - | ., | ** | .. | $\cdots$ |
| Ontario. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . F. $^{\text {. }}$ | 13,010 | 7,473 | 5.8 | 69.1 | 80.6 |
| Manitobs ${ }_{\text {c }}$ | 6,208 | 6,567 | 4.7 | 71.3 | 85.2 |
| Manitoba. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . F. $^{\text {. }}$ | 1,837 1,105 | 5,765 5,202 | 7.1 8.2 | 69.6 62.2 | 72.1 64.3 |
| Saskatohewan................................ . . . . | 2.046 | 7,038 | 11.0 | 68.1 | 66.5 |
| , | 1.002 | 5, 839 | 12.2 | 47.5 | 47.2 |
| Alberta...................................... . . . . | 3,575 | 7,082 | 8.5 | 71.9 | 73.5 |
| British Columbis............................. | 2,176 4,287 | 5,886 | 10.6 10.0 | 52.8 | 53.5 |
| Rritish Columbis................................ | 4,287 2,200 | 7,507 6,507 | 10.0 10.1 | 73.1 | ${ }_{67.2}$ |

${ }^{3}$ Fully qualified at the elementary level are teachers with junior matriculation and two or more years, or genior matriculation and one or more years of professional training. At the secondary level they are teachers with junior matriculation and four or more years, or senior matriculation and three or more years of schooling, of which one year was professional training.
${ }^{2}$ Comprises teachers and principals instructing or supervising elementary grades only, and those instructing or supervising both elementary and secondary grades in rural sehools with five or fewer classes. Teachers snd principals in Ontario are classified as elementary according to the provincial Report of the Minister. 1964.
${ }^{3}$ Comprises teachers and principsls instructing or surervising secondary grades only, and those instructing or supervising both elementary and secondary grades in urban centres and in rural schools with sir or more classes. Teachers and principals in Ontario are classified as secondary according to the provincial Report of the Minister, 1964.

Financial Support.-Table 7 shows details of the income of public school boards for the years 1961-63. In most provinces, local taxation is the most important source of revenue followed by provincial government grants. In 1963, all other sources of income accounted for 3 p.c. of total current revenue. (See also p. 346.)

Not all provinces collect and publish figures for debenture indebtedness, although it is the usual practice in all provinces, except Newfoundland, for boards to finance now construction, at least in part, by issuing debentures. Provincial aid toward capital expenditures may take the form of a percentage of total cost, a fixed amount per classroom or assistance with debenture debt charges. Many provinces guarantee debentures issued by school boards and others assist in marketing them.

## 7.-Income of School Boards for Publicly Controlled Elementary and Secondary Schook, by Province, Years Ended Mar. 31, 1961-63

Note.-The receipts shown in this table do not include any amounts raised by loans or the sale of bonds or debentures as all revenue of this nature must be repaid ultimately with money raised by local taxation. Figures from 1914 are given in the corresponding table of previous Year Books beginning with the 1936 edition.

| Province and Year Ended - | Income from- |  |  | Total Current Revenue Recorded | Debenture Indebtedneas |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Provincial Government Grants | Local Taxation | Other Sources |  |  |
|  | \$'000 | \$'000 | \$ 000 | \$000 | 8'000 |
| Newfoundland...... ............ ${ }_{1962}^{1961}$ | 15,735 18,621 | 205 272 | 2,151 2,233 | 18,091 19,126 | . |
| 1963 | 18,746 | 363 | 2,262 | 21,371 | $\because$ |
| Prince Edward Laland. . . . . . . . . 19.1961 | $\xrightarrow{2,478}$ | 1,412 1,566 | 97 99 | 3,987 4,602 | $\cdots$ |
| 1963 | 3,502 | 2,149 | 46 | 5,697 | * |
| Novs Seotia...... . . ... ...... 1961 | 16,863 20,365 | 20,960 23,651 | 1, ${ }^{7} \mathbf{7} \mathbf{2 3}$ | 39,056 44,718 | 45,350 50,793 |
| 1963 | 21,299 | 24,740 | 523 | 46,562 | 56,104 |
| New Brunswick................. ${ }_{1962}^{1961}$ | 9,350 10,330 | 19,567 22,482 | 825 321 | 29,742 33,133 | 31,736 25,377 |
| 1863 | 11,388 | 25,015 | 442 | 36,845 | 28,423 |
| Quebec...... . .. . . . ... ... . . 1981 | 114,725 | 160,235 | 10,907 | 255, 867 | 393,250 |
| 1962 1963 | 169,277 197,678 | 154,984 190,298 | 15,822 18,195 | 340,083 406,271 | 438,872 485,737 |
| Ontario.......... . . . . . . . . . . . . 1861 | 181,546 | 294, 049 | 13,279 | 488,874 | 647,920 |
| 1982 | 204,548 | 216,948 | 27,486 | 548,982 | 682,626 |
| 1863 | 233,689 | 345,371 | 20,011 | 599,071 | 732,917 |
| Manitoba......................... 1961 |  | 35,974 | 58 | 61,218 | 60,806 |
| 1962 | 27,301 | 38,104 | 126 | 65,531 | 63,292 |
| 1963 | 28,527 | 41,389 | 44 | 69,960 | 71,252 |
| Saskatohewan............... .... 1961 | 31,285 | 40,454 | 1,836 | 73,575 | 44,396 |
| 1962 | 33,300 | 43,246 | 1,483 | 78,029 | 49,547 |
| 1963 | 37,449 | 46,156 | 1,624 | 85,229 | 55,750 |
| Alberta......... . . . . . . . . . . . . . . . 1961 | 63,547 | 52,445 | 1,332 | 117,324 | 124,812 |
| 込 1962 | 75,483 | 67,779 | 1,491 | 144.753 | 135, 376 |
| 1963 | 76,068 | 71,036 | 1,617 | 148.721 | 152,779 |
| Britigh Columbia......... ...... 1961 | 58,934 | 84, 102 | 2,560 | 125,596 | . |
| 1962 | 62,800 | 69,092 | 2,655 | 134,347 | . $\cdot$ |
| 1963 | 68,698 | 77,692 | 2,720 | 149,110 | .. |

: Net figures, after deduction of sinking funds.

## Subsection 2.-Universities and Colleges

Institutions.-An institution of higher education in Canada is generally defined as one that offers one or more years of work beyond the most advanced high-school grade in the province in which it is located, with all or part of the work offered being acceptable for credit toward a university degree or equivalent diploma. The definition thus excludes institutions offering technical and vocational post-high school courses for which credit is not given.

In 1965-66 there were nearly 400 institutions of higher education in Canada, of which about 50 have degree-granting powers (not including about 20 that confer degrees in theology only).

Enrolment.-Full-time university-grade enrolment continues to increase year by year and indications are that enrolments may well be double the 1965-66 figure of 205,888 in about six years. Table 8 shows full-time enrolment by province for the academic years ended 1963-66. In addition to full-time students, there were about 74,000 part-time uni-versity-grade students (including over 7,700 graduate students) in attendance during the regular 1963-66 winter session and over 6,500 students taking university-grade credit correspondence courses. University-grade summer school enrolment was over 62,000 in 1964 and over 70,000 in 1965.
8.-Full-Time Regular Winter Session University-Grade Enrolment, by Province, Academic Years Ended 1963-66

| Province | 1962-63 |  | 1963-64 |  | 1964-65 |  | 1965-66 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total | Graduate Only | Total | Graduate Only | Total | Graduate Only | Total | $\begin{gathered} \text { Graduate } \\ \text { Only } \end{gathered}$ |
|  | No. | No. | No. | No. | No. | No. | No. | No. |
| Newfoundland......... | 1,998 | 34 | 2,294, | 47 | 2,652 | 51 | 3,168 | 62 |
| Prince Edward Island. . Nova Scotia........... | 705 7,034 | 242 | 7.732 | 269 | 802 8,509 | 400 | 9,457 | 450 |
| New Brunswick | 4,896 | 181 | 5,153 | 199 | 5,773 | 305 | 6,371 | 383 |
| Quebec. | 47,321 | 2,813 | 53,605 | 3,868 | 59.400 | 4.641 | 67,316 | 5, 810 |
| Ontario. | 39,269 | 3,328 | 44, 191 | 4,201 | 50,793 | 5, 42.1 | 58,983 | 6,859 |
| Manitobs | 7,741 | 296 | 8,802 | 564 | 9,172 | 531 | 11.069 | 600 |
| Saskatelewan. | 7,024 | 253 | 7,811 | 315 | 9,603 | 337 | 10,707 | 407 |
| Alberts | 9,837 | 656 | 11,079 | 825 | 12,977 | 1,048 | 14.749 | 1,304 |
| British Columbis. | 15,560 | 633 | 17,043 | 845 | 18,557 | 1,060 | 23,144 | 1,311 |
| Totals | 141,388 | 8,436 | 158,388 | 11,133 | 178,238 | 13,797 | 205,888 | 17,196 |

Foreign enrolment has risen considerably during the past decade, with a larger proportion of students from countries other than the United States and Britain coming to Canadian institutions, as shown in Table 9. In 1965-66 about one of every 18 full-time university students in Canada was a resident of a country other than Canada. The United States, Hong Kong, Trinidad and Tobago, India and Britain each accounted for over 500 students, and France, Pakistan, Malaysia, Viet-Nam, Nigeria, Jamaica, the Republic of China, Japan, Germany, Guyana and Haiti contributed from 100 to 400 each. About 150 other countries or territories were represented in the figures.

## 9.-Students from Other Countries in Canadian Universities, and Canadian Students in Universities in the United States and Britain. Selected Academic Years Ended 1831-66

| Academic Yesr Ended- | Total Fuil-Time University Enrolment in Canada | Students with Residence in- |  |  |  |  | Enrolment from Other Countries in Canada |  | Canadians Sturdying in- |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | United States | Britain | British West Indies | New-foundJand | Otber Countries | From all Countries | From British Commonwealth Only | United States ${ }^{2}$ | Britain ${ }^{\text {3 }}$ |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| 1931. | 32,926 | 1,506 | 333 | 54 | 175 | 236 | 2,304 |  | 1,313 | 212 |
| 1941 | 36, 319 | 1.478 | 41 | 74 | 174 | 289 | 2,056 |  | 1, 458 |  |
| ${ }_{1961}^{1951}$ | 88,306 113,864 | 1.758 | 164 | ${ }_{2}^{252}$ | ... | 1,014 | 3.188 |  | 4.528 | 372 |
| ${ }_{1961}^{1962}$ | 113,864 128,894 | ${ }_{2}^{2+362}$ | 582 | 1.210 | ... | 3 3,097 | 7,251 | 3,294 | 6,058 | 502 |
| 1963 | 128,894 141,388 | 2, 8680 | 577 650 | 1,251 | $\ldots$ | 3,412 | 7,900 | 3.552 | 6,571 | 559 |
| 1984 | 158,388 | 3,193 | 687 | 1,214 | $\ldots$ | 3,870 4.396 | 8,518 | 3,763 | 8 | 657 |
| $19650 . . .$. | 178,238 | 3.124 | 715 | 1,288 | $\ldots$ | 4, 374 | 10,011 | 4,452 | 9,253 | ${ }_{657}^{652}$ |
| 10668....... | 205,888 | 3,395 | 893 | 1,064 | ... | 5,960 | 11,312 | 5,036 | , 28 | ... |

[^116]Graduates.-Table 10 gives figures for graduates in most faculties for the academic years ended 1963-65. A total of 33,497 bachelor and first professional degrees and equivalent diplomas were granted in 1964-65. Included in the total were 10,416 women.

## 14.-Graduates from Universities and Colleges, Academic Years Ended 1963-65

Nore.-Figures tor 1920-36 are given in the 1938 Year Book, pp. 993-997, and for 1937-62 in the correspondiog table of subsequent editions.

| Field of Study | 1982-63 |  | 1903-64 |  | 1984-65 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total | Female | Total | Female | Total | Female |
|  | No. | No. | No. | No. | No. | No. |
| Graduates in Arts, Pure Science and Commerce. | 13,355 | 3,959 | 16,517 | 4,784 | 18,984 | 5,7\% |
| Bachelors of Artas ............... .... | 10.533 | 3,560 | 12,438 | 4, 308 | 14,246 | 5,168 |
| Bachelors of Science (in Arts): | 2.237 1,186 | 352 47 | 2,684 | 411 | 3,111 | 5 |
| Graduates in Applied Science | 2,435 | 5 | 2,643 | 7 | 24488 | 16 |
| Bachelors of Applied Science in Engineering | 2,246 | 2 | 2,422 | 7 | 2,256 |  |
| Bachelors of Architecture ${ }^{\text {4 }}$....... | 96 | 3 | 113 | - | 118 | 3 |
| Bachelors of Forestry... | 88 | - | 105 | - | 114 | 1 |
| Bachelors of Fisheries | 5 | - | 3 | $\cdots$ | - | - |
| Graduates in Agriculture, Veterinary Science and Household Sclence. | 763 | 336 | 739 | 340 | 838 | 341 |
| Bachelors of Agricultural Science........ ........ | 357 | 13 | 392 | 12 | 436 | 21 |
| First degrees in Veterinary Science | 85 | 2 | 83 | ${ }^{6}$ | 81 | 4 |
| Bachelors of Household Science. | 321 | 321 | 324 | 322 | 321 | 319 |
| Graduates In Education, Lftrary Sclence and Social Service. | 4,369 | 1,845 | 5,117 | 2,151 | 6,434 | 2,340 |
| First degrees in education or pedagogy........ .. | 3,495 | 1,379 | 3,998 | 1,572 | 5,204 | 2,318 |
| Librarian degrees and diplonas...... | 265 | 195 | 348 | 256 | 385 | 297 |
| Physical education first degrees and diplomas. . | 337 | 104 | 472 | 144 | 495 | 121 |
| Social service degrees and diplomas........... | 272 | 167 | 299 | 178 | 350 | 204 |
| Graduates in Medicine and Related Studles. | 1,989 | 709 | 2,111 | 835 | 2,580 | 1,042 |
| Medical doetore. | 826 | 65 | 773 | 71 | 1,0344 | 94 |
| Dentists | 250 | 5 | 258 | 14 | 286 | 9 |
| Pharmacists. | 292 | 75 | 266 | 91 | 375 | 125 |
| First degrees in nursing | 386 | 386 | 407 | 407 | 388 | 560 |
| Pbymiotberapy and occupational therap | 173 | 173 | 249 | 247 | $\begin{array}{r}249 \\ 22 \\ \\ \\ \hline\end{array}$ | 247 |
| Chiropractic.... | 19 38 | 3 2 | 26 32 | 1 | 20 | 3 |
| Graduates In Law and Theology. | 1,457 | 47 | 1,602 | 70 | 1,684 | 76 |
| First degrees and equivalent diplomas in law. | 588 | 24 | 701 | 32 | 767 | 38 |
| Roman Catholic theological colleges....... | 545 | - | 560 | - | 575 | - 38 |
| Protestant theological collegest ........ ... ... | 324 | 43 | 341 | 38 | 342 | 38 |
| Other First Dearees and Equivalent Diplomas. . | 253 | 132 | 295 | 181 | 489 | 377 |
| Bachelors of Fine and Applied Arts.............. | 13 | 8 | 21 | $1!$ | 21 | 14 |
| Bachelors of Interior Design... | 24 | 11 | 24 | 21 | 21 | 17 |
| Journalism. . ...... | 33 | 15 | 32 | 16 | ${ }_{128}^{33}$ | 94 |
| Bachelors of Music | 77 | 51 | 128 | 69 69 | 128 286 | 181 |
| Others.. | 106 | 47 | 128 | 69 | 286 | 181 |
| Graduate and Honorary Degrees............ | 3,8\%7 | 698 | 4,215 | 722 | 4,022 | 9.5 |
| Honorary doctorates...... | 254 | 7 | 244 | ${ }_{38}^{13}$ | ${ }_{569}^{258}$ | ${ }_{55}^{15}$ |
| Doctorates in course.. | ${ }^{421}$ | 3 | 481 | 38 | -569 | 546 |
| Masters of Arts ${ }^{\text {I . . }}$. | 1,705 | 402 | 1,947 | ${ }_{6} 64$ | 2,242 | 103 |
| Masters oi Science ${ }_{\text {Licences }}\left(\right.$ except Theology) ${ }^{\text {a }}$...................... | 843 604 | 18 183 | 980 | 62 145 | 1,681 | 186 |

[^117]a Includes Bachelors of Accounting and Secretarial Science.
: Some institutions include Science degrees in Arts. school of Architecture of Montreal. ${ }_{5}$ Prior to 1964 granted the M.D. degree only after the intern year. In 1964-65, they began te de Hontrial and l'Universite Laval that year both institutions had two graduating classes.

5 Includes all diplomas and degrees except for Bachs. elors of Divinity. inctudncludes M. Com., M.Ed., M.Paed., M.S.W., as well as M.A. In sorpe ingtitutions, M.Sc. degrees are included with M.A.s. ${ }^{8}$ Includes M.A.Sc., M.S.A., M.Sc.F., M. Arch., M.V.Sc., M.Sc. Dent., M. Surgery (where conferred separately) as well as M.8c.
"The "Licence" in the French-language
universities is the next degree in advance of the Bachelor.

Teaching Staffs.-Table 11 shows the trend in university teaching staffs since 1957.

## 11.-Full-Time Teaching Complement in Universities and Colleges, Academic Years Ended 1957-86

Nore.-Figures are estimates based on returns from institutions representing about 50 p.c. of the total enrolment and include some research personnel and junior and sessional lecturers and aesistanta.

| Academic Year Ended- | Teachers | Academic Year Ended- | Teacbers |
| :---: | :---: | :---: | :---: |
|  | No. |  | No. |
| 1957. | 7,000 | 1962........... | 10,540 |
| 1958. | 7,500 | 1963 | 11,670 |
| 1959. | 8,200 | 1964. | 12.940 |
| 1950. | 9, 9.750 | 1965. | 14.300 |
| 1961. | 9,755 | 1966. | 15,000 |

Table 12 gives median salaries, by rank and region, for the staffs of 17 major institutions for 1965-66.

## 12.-Median Salaries of Teachers at 17 Universities, Academic Year 19*5-66

Nore.-Institutions include: West-Universities of Manitoba, Saskatchewsn, Alberta (Edmonton and Calgary). British Columbia; Central-Bisbop's, McGill, Queen's, Toronto, Vietoris, Trinity, McMaster. Western Ontario; Atlantic-Acadia, Dalhousie, St. Francis Xavier, Mount Allison, New Brunswick.

| Rank | Region |  |  |  | Staff plement |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Atlantic Provinces | Central Provincea | Western Provinces | Total |  |
|  | \$ | + | \$ | \$ | No. |
| Deans.. | 15,000 | 19,150 | 19,036 | 18,556 | 134 |
| Profzegors.. | 12,591 | 15,302 | 15.210 | 14,981 | 1,476 |
| Aesociate protessors. | 9,779 | 11,050 | 11,995 | 11,435 | 1,851 |
| Asistant professors..... | 8,050 6.449 | 8.715 | 9,345 7 | 8,957 7 | 2,367 |
| Instructors and lecturers | 6.449 | 7,079 | 7,423 | 7,157 | 1,210 |
| Totals, All Ranks. | 8,902 | 10,283 | 10,385 | 14,250 | 7,074 ${ }^{1}$ |

${ }^{1}$ Includes 36 ungraded professors not distributed above.
Finances.-Table 13 gives a ten-year series of the finances of Canadian universities. Since 1954 they have received more than one half of their revenue from government grants and a very small amount from municipal councils. Beginning with the academic year 1951-52, the Federal Government has provided university grants to help meet current operating costs. These grants were originally paid on the basis of 50 cents per head of population in each province and the eligible institutions received their share of the provincial allotment according to the number of full-time students in undergraduate and graduate courses. The rate of grant was increased to $\$ 1.00$ per capita in 1956-57, to $\$ 1.50$ in 1958-59 and to $\$ 2.00$ in 1962-63. The Province of Quebec did not accept this grant for the years up to 1955-56. From 1956-57 to 1959-60 the payments refused by Quebec were held in trust by the Canadian Universities Foundation (now the Association of Universities and Colleges of Canada), which administers the fund. In 1960-61 the Quebec Government and the Federal Government negotiated a new tax-sharing agreement under which Quebec provides its own grants and is reimbursed by an abatement of corporation tax. Table 14 gives detaila of the federal grants for each of the academic years ended 1964-66.

The Federal Government also provides assistance to universities through the University Capital Grants Fund which is administered by the Canada Council. The original amount in the fund was $\$ 50,000,000$ (interest and profits to Mar. 31, 1966 increased it to over $\$ 67,000,000$ ), to be granted in amounts not exceeding 50 p.c. of specific building or capital equipment projects, having regard to the population of each province. Up to the end of March 1966, a total of almost $\$ 58,000,000$ had been authorized. Grants are paid in four equal instalments spread over the period of construction so that there is a time lag between approval and payment.

The Canada Council was also endowed with an additional $\$ 50,000,000$ (raised by $\$ 10,000,000$ Apr. 3, 1965), the interest on which is available for the provision of scholarships or other assistance in the fields of the arts, humanities and social sciences (see p. 376).

## 13.-Current Income and Expenditure of Universitles and Colleges, Academic Years Ended 1956-65

| Academie Year Ended- | Current Income |  |  |  |  | Total Current Expenditure |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Endowments and Investraents | Government Grants | Student Fees ${ }^{1}$ | Miscellaneous | Total ${ }^{\text {T }}$ |  |
|  | ${ }^{\prime} 000$ | ${ }^{\prime} 000$ | \$'000 | $\mathbf{S}^{\prime} 000$ | $\$ 000$ | 8000 |
| 1956... | 4,692 | 45, 107 | 21,600 | 8,938 | 80,337 | 80,427 |
| 1957.... . | 5,014 | 49,911 | 25, 105 | 10,733 | 90,763 | 86, 521 |
| 1958. | 4,375 | 57.118 | 30, 887 | 10,304 | 102.664 | 102.991 |
|  | 4. 4.688 | 70, 843 | 33,546 | 11,373 | 120.430 | 121. 113 |
| $19 \hat{60} 0$. | 5.082 | 82.515 | 40,789 | 14,122 | 142,518 | 143,311 |
| 1961. | 5. 232 | 110,183 | 45,991 | 14,396 | 175,802 | 175,970 |
| $1962{ }^{2}$ | 7,834 | 121,4R1 | 56,219 | 25,062r | 210, 8060 | 211.336 |
| 19632 | 8.191 | 142,606 | 62,397 | 27,107 | 240,301 | 244,015 |
| 1964. | 10.908 | 168,628 | 75,573 | 28,785 | 283,292 | 289,931 |
| 1965 | 7,986 | 200.412 | 89,738 | 44,632 | 342,768 | 345,222 |

${ }^{1}$ Board and lodging not included. ${ }^{2}$ Includes the Canadian Services Colleges.
14.-Federal Government University Grants, by Province, Academic Years Ended 1944-66

| Province and Aeadamic Year Ended- | Institutions | Eligible Enrolment | Total Grants | Grant per Eligible Student |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$ | \$ |
| 1966 | 1 | 3,168 | 996,000 | 314.39 |
| Prince Edward Island........ ... ... ... ..... 1964 |  | 734 |  |  |
| 1965 1966 | $\stackrel{2}{2}$ | 802 924 | 214,000 216,000 | 266.83 233.77 |
| Nova Scotia. ... .. .. .... ... .... ...... 1964 | 13 | 7,505 | 1,512,000 | 201.47 |
| 1965 | 13 | 8,297 | 1,520,000 | 183.20 |
| 1986 | 18 | 9,283 | 1,522,000 | 163.96 |
| New Brunswick. ...... ... ............ . . . . . . . . 1964 | 4 | 5,143 | 1,228,000 | 238.77 |
| 1965 | 4 | 5,759 | 1,234,009 | 214.27 |
| 1966 | 4 | 6,344 | 1,246,000 | 196.41 |
| Quebecl......... | '* | ... | $\cdots$ | $\cdots$ |
| Ontario........... .. ........ . ................... 1964 | 31 | 39,984 | 12,396,000 | 222.69 |
| 1965 | 33 | 46,778 | 13,172,000 | 281.58 |
| 1966 | 34 | 54,912 | 13,462,000 | 245.16 |
| Manitoba. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 1964 | 8 | 8,516 | 1,900,000 | 223.11 |
| 1965 | 8 | 8,892 | 1,916,000 | ${ }^{215.47}$ |
| 1966 | 8 | 10,756 | 1,924,000 | 178.88 |
| Saskatchewan. ................................... . 1964 | 14 | 7.652 | 1,886,000 | 243.86 |
| 1965 | 13 | 9,456 | 1,886,000 | 199.45 |
| 1966 | 11 | 10.583 | 1,902,000 |  |
| Alberta.............. . ....... . . . . . . . . . ... . . 1964 |  |  |  | 269.00 |
| 1965 | 7 | 12,517 | $2 ; 864,000$ | 228.81 |
| 1968 | 7 | 14,282 | 2,902,000 | 203.19 |
| Britiah Columbia. ... ... ... ... ... ... ..... |  | 16,519 | 3,390,000 | 205.26 |
|  | 5 6 | 17,598 21,645 | $3,476,000$ $3,578,000$ | 198.56 165.30 |
|  | 6 | 21,645 | 3,578,000 |  |
| Totats ${ }^{\text {. . }}$ | 84 | 98,720 | 26,778, 000 | 271.25 |
|  | 88 | 113,111 | 27,244,000 | 281.4 |
|  | 85 | 131,87\% | 27,748,000 |  |

[^118]
## Subsection 3.-Vocational Education

Table 15 summarizes the data on full-time vocational training classes. The duration of these classes may vary from three weeks taken annually by indentured apprentices at provincially operated trade schools, to three-year vocational high school courses or postsecondary courses offered in provincial institutes of technology. Numerous skills are taught, ranging from short courses in welding or typing to extended courses for instrument technicians or aircraft maintenance men. Students taking two-year or three-year vocational courses in public secondary schools may, upon completion, enter employment or may continue other formal training in a trade school or an institute of technology.

In addition to the full-time vocational courses, a great variety of part-time instruction is offered by both public and private institutions as an alternative to full-time training or as an attraction to the individual interested in a hobby.
15.-Full-Time Enrolment in Vocational Courses, School Year 1963-64

| Courge | NEd. | P.E.I. | N.S. | N.B. | Que. | Ont. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Publicly Sponsored | No. | No. | No. | No. | No. | No. |
| Vocational high achool courses... | 366 | 401 | 1,636 | 7,696 | 21,473 | 132,175 |
| Post-secondary technical courses. . | 42 |  | 76 | 207 | 6,977 ${ }^{\text {- }}$ | 4,743 |
| Apprenticeship coursea. . . . . . . . . . | 278 | 84 | 592 | 268 |  | 3,650 |
| Trade and other occupational courses | 1,584 | 12 | 401 | 1,482 | 20,683 | 1,062 |
| Training in co-operation with industry ${ }^{3}$. |  |  | 248 | 378 | 3,319 | 835 |
| Training of the unemployed ${ }^{3}$. ..... | 731 | 334 | 1,004 | 2,930 | 9,429 | 25,176 |
| Training of the disabled ${ }^{3}$.... | 121 | 10 | 240 | 198 | 435 | 1,100 |
| Training of technical and vocational teachers ${ }^{2}$ |  |  | - | 995 | 325 | 228 |
| Training for federal departments and agencies ${ }^{3}$ | 114 |  | 509 | - | 394 | 226 |
| Privately SponsoredTrade school course8............. Busidess school courses. | 二 |  | 110 | 81 575 | 8,595 8,618 | $\mathbf{3 . 7 3 2}$ $\mathbf{5 . 7 5 7}$ |
| Totals. | 3,286 |  |  | 13,903 | 80,248 | 178,884 |
|  | Man. | Sask. | Alta. | B.C. | $\begin{aligned} & \text { Y.T. } \\ & \text { N.W.T. } \end{aligned}$ | Canada |
| Publiely Sponsored-1 |  | No. | No. | No. | No. | No. |
| Vocational bigh school courses.... | 4,801 | 9,014 | 11,471 | 12.412 | - | 201.535 |
| Potsecondary technical courses. . | 294 868 | 316 925 | 1,687 ,+ 565 | 150 1.831 | - | 14,492 $13,061^{15}$ |
| Trade and other occupational courses ${ }^{3}$. | 575 | 1,490 | 2,588 | 4,586 | 150 | 34,593 |
| Training in co-operation with industry ${ }^{2}$ | 34 | 198 | 1,744 | 1,060 |  | 7,814 |
| Traming of the unemployed 3 ...... | 3,103 | 1,465 | 1,779 | 2,844 | 128 | 48,923 |
|  | 472 | 177 | 28 | 87 | - | 2,863 |
| Training of technical and vocational teachera ${ }^{\text {: }}$. <br> Training for federal | 8 | - | 80 | 19 | 10 | 749 |
| and agencies ${ }^{\text {a }}$. . . | - | - | - | - | - | 1,243 |
| Privately SponsoredTrade school coursea. Bubiness school courses | $\begin{array}{r} 921 \\ 1,386 \end{array}$ | $\begin{array}{r} 392 \\ 1,248 \end{array}$ | $\begin{aligned} & 1,256 \\ & 1,624 \end{aligned}$ | $\begin{array}{r} 859 \\ 2.504 \end{array}$ |  | $\begin{aligned} & 15,956^{6} \\ & 22,214^{4} \end{aligned}$ |
| Totals | 12,472 | 15,225 | 26,80\% | 26,382 | 288 | 363,443 |

[^119]
## Subsection 4.-Adult Education

Adult education benefits from a wide variety of sponsors, both public and private, but most important in this respect are government departments and agencies at all three levels. Although the Federal Government makes substantial contributions, provincial departments of education, of course, play the major role since education is a provincial responsibility. Other provincial departments, such as the departments of health and of agriculture, are also active in promoting education for adults.

Government-sponsored classes comprised 79 p.c. of the total adult education enrolment of $3,229,100$ in 1964-65. Compared with the previous year, there was a marked increase of enrolment in agriculture but a decrease in elementary academic education. Govern-ment-sponsored lectures, film showings, exhibits, etc., claimed over 35 p.c. of the total attendance. Of the total enrolment, 7.8 p.c. was reported by 73 universities and colleges. Other sponsors were public libraries, museums and art galleries, teacher-training institutions, private trade and business schools and voluntary organizations. These institutions were responsible for a large part of the increase in enrolment.
16.-Adult Education Activities, School Year 1963-64

| Province or Territory and Sponsor | Part-Time Enrolment in- |  |  | Total Enrolment | Attendance at Public Lectures. ete. |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Academic Subjects | Vocational shd Profesaional Training | Informal Courses |  |  |
|  | No. | No. | No. | No. | No. |
| Universities... | 814 | 204 | 1,068 | 2,086 | 7,850 |
| Government | 1,763 | 1,752 |  | 3,515 |  |
| Prince Edward Island- | 411 | 485 |  | 896 |  |
| Government | 248 | 634 | 708 | 1,590 | 9,586 |
| Nova Scotia- | 2,718 | 5,224 | 1,817 | 9,757 | 33,312 |
| Government1. | 3,771 | 14,846 | 2,681 | 21,298 | 13,600 |
| New Brunswick- | 3, 108 | 108 | 1,003 | 4,217 | 11,850 |
| Goverament ${ }^{\text {Gueber }}$ | 4,650 | 9.869 | 7,810 | 22,129 | 19,300 |
| Universities. | 32,297 | 21,103 | 14,120 | 67,520 | 122,054 |
| Government ${ }^{1}$ | 31,815 | 288,83B | 58,325 | 378.976 | 396,268 |
| Ontario- Universities | 30,105 | 19,992 | 26, 883 | 76, 980 | 80,270 |
| Government ${ }^{1}$. | 43,980 | 85.197 | 67,588 | 196,775 | 150,550 |
| Manitaba- Uivivergities. Government | 4,895 6,495 | 183,907 | 3,488 23,171 | +10.037 | $\begin{array}{r} 49,783 \\ 782,259 \end{array}$ |
| Saskatchewan- |  |  |  |  |  |
| Universities. | 7,703 | 10,674 | 3,724 | 22.111 | 2,790 |
| Government | 11,307 | 257,113 | 5,808 | 274.288 | 4,254 |
| Alberta- |  |  |  |  |  |
| Universities.. | 6,028 | 117,747 | 27,067 | 153,842 | 1,200 |
| British Columbia- |  |  |  |  | 209,000 |
| Universities... | 23,999 | 9,004 24,548 | 41,467 | 94,284 | 202,684 |
| Yakon Territory | 2,15 | 2, 78 | 91 | 182 | $\overrightarrow{72}$ |
| Federal Government | 25,776 | 104,542 | 4.041 | 134,359 | 672,410 |
| Public libraries.. |  |  | 5,115 | 5,115 | 581,886 |
| Business colleges. |  | 22,465 | - | 22.485 | - |
| Teacber-training institutions. | - | 40,669 | $\cdots$ | 40,669 | 二 |
| Trade schools............... | $\cdots$ | 40,835 | 二 | 40, 835 | - |
| Training in industry ${ }_{\text {Museums and art galleries... }}$ |  | 61,080 | 5,974 | 61,080 5,974 | 854,813 |
| Wheat prols.............. | - | 12,078 | 8,974 | 12,075 |  |
| Totals, 1843-642 Totals, 1963-632 | $\begin{aligned} & 264,252 \\ & 201,286 \end{aligned}$ | $1,338,224$ | $\begin{aligned} & 337,716 \\ & z=2,8 \geqslant 6 \end{aligned}$ | $\begin{aligned} & 1, \$ 36,188 \\ & 1,077,185 \end{aligned}$ | $\begin{aligned} & 4,279.879 \\ & 3,772,402 \end{aligned}$ |

2 Excludes duplicated enrolment.

## PART II.-CULTURAL ACTIVITIES RELATED TO EDUCATION

## Section 1.-The Arts and Education

Fine Art Schools, Galleries and Organizations.*-Fine art (architecture, painting and drawing, commercial and decorative arts, graphics, ceramics and sculpture) appears as an elective subject of the faculty of arts in a number of universities. where it may be taken as one of five, six or more subjects for a year or two. Five universities offer a Bachelor of Fine Arts degree:-

University of Alberta, Edmonton, Alta.
University of Manitoba, Winnipeg, Man.
Mount Allison University, Sackville, N.B.
Sir George Williams University, Montreal, Que.
University of Victoria, Victoria, B.C.
Ten universities offer a Bachelor of Arts degree with a major in fine art:-
Uuiversity of British Columbia, Vancouver, B.C.
University of Calgary, Calgary, Alta.
University of Guelph, Guelph, Ont.
McGill University. Montreal, Que.
McMaster University, Hamilton, Ont.
Queen's University, Kingston, Ont.
University oi Saskatehewan, Saskatoon and Regina, Sask.
Sir George Williams University, Montreal, Que.
University of Toronto, Toronto. Ont.
University of Windsor, Windsor, Ont.
There are many schools of art with varying academic requirements for admission. These offer diploma or certificate courses and are concerned largely with the technical development of the artist. Among those widely known are:-

Nova Scotia College of Art, Halifax, N.S.
Ccole des Beaux-Arts, Quebec. Que.
Ecole des Beaur-Arts, Montreal, Que.
School of Art and Design, Montreal Museum of Fine Arts, Montreal, Que.
Ontario College of Art, Toronto, Ont.
University of Manitoba School of Fine Arts, Winnipeg, Man.
Sebool of Art, Regina Campus, University of Saskatchewan, Regina, Sask.
Alberta College of Art, Calgary, Alta.
Institut des Arts Appliqués, Montreal. Que.
Vancouver School of Art. Vancouver, B.C.
Kootenay School of Art, Nelson, B.C.
University of Victoria, Victoria, B.C.
Courses in these schools vary in length with the requirements of the individual student but may extend over as many as four years. In some of these schools fine crafts as well as fine arts are taught. Summer schools of art are sponsored by some of the foregoing institutions, by universities and by various independent groups. One of the more important summer schools is the Banff School of Fine Arts, affiliated with the University of Calgary. Two booklets published by the Canadian Cultural Information Centre provide details on courses in the fine arts-Facilities for Study in the Arls in Canada and Some Summer Courses in the Arts in Canada.*

Public art galleries in the principal cities perform valuable educational services among adults and children. Children's Saturday classes, conducted tours for school pupils and adulta, radio talks, lectures and concerts are features of the programs of the various galleries. Many of these institutions supply their surrounding areas with travelling exhibitions and some range even farther afield. Several organizations such as the Maritime Art Association, the Atlantic Provinces Art Circuit, the Western Canada Art Circuit, the Art Institute of

[^120]Ontario and the Queen's Art Circuit have been founded to carry out this sort of travelling program on a regional basis. The National Gallery of Canada conducts a nation-wide program of this nature and is the third largest circulating agency in North America. Several galleries maintain an art-lending or rental service.

Among the principal public art galleries are:-

> Beaverbrook Art Gallery, Fredericton, N.B.
> Montreal Museum of Fine Arts, Montreal, Que.
> National Gallery of Canada, Ottawa, Ont.
> Public Library and Art Museum, London, Ont.
> Art Gallery of Ontario, Toronto, Ont.
> Art Gallery of Hamilton, Hamilton, Ont.
> Willistead Art Gallery, Windsor, Ont.
> Winipeg Art Gallery, Winnipeg. Man.
> Kitehener-Waterloo Art Gallery, Kitchener, Ont.
> Mendel Art Gallery, Saskatoon, Sask.
> Edmonton Art Gallery, Edmonton, Alta.
> Vancouver Art Gallery, Vancouver, B.C.
> Art Gallery of Greater Victoria, Victoria, B.C.
> Fathers of Confederation Art Gallery and Museum, Charlottetown, P.E.I.

Other important collections of art are housed in arts councils and university galleries. Among university galleries are:-

Fine Arts Gallery of the University of British Columbia, Vancouver, B.C.
University of Alberta, Edmonton, Alta.
University of Calgary, Calgary, Alta.
Norman Mackenzie Art Gallery of the University of Saskatchewan, Regina, Sask.
Agnes Etherington Art Centre, Queen's University, Kingston, Ont.
McIntosh Memorial Art Gallery, University of Western Ontario, London, Ont.
Hart House, and Sigmund Samuel Canadiana Gallery of the University of Toronto, Toronto, Ont.
Owens Museum of Fine Arts, Mount Allison University, Sackville, N.B,
St. John's Memorial University Art Gallery, St. John's, Nfld.
Creative Art Centre of the University of New Brunswick, Fredericton, N.B.
Sir George Williams University Art Gallery, Montreal, Que.
Dalhousie University Art Gallery, Halifax, N.S.
Three of the more important galleries connected with arts councils are the St. Catharines and District Arts Council, St. Catharines, Ont., the Glenhyrst Arts Council, Brantford, Ont., and the Art Gallery of the Calgary Allied Arts Centre, Colgary, Alta.

Other Fine Art Organizations.-Among the leading art organizations of national scope, exclusive of museums and art galleries, are:-

[^121]Young members of the Saturday morning class at the Art Gallery of Ontario preparing background panels for a Christmas exhibit of Canadian-designed toys.


The National Gallery of Canada.-The beginnings of the National Gallery of Canada are associated with the founding of the Royal Canadian Academy of Arts in 1880. The Marquis of Lorne, then Governor General, had recommended and assisted the founding of the Academy and among the tasks he assigned to that institution was the establishment of a National Gallery at the seat of government. Until 1907 the National Gallery was under the direct control of a Minister of the Crown but in that year, in response to public demand, an Advisory Arts Council consisting of three laymen was appointed by the government to administer grants to the National Gallery Three years later, the first professional curator was appointed.

In 1913, the National Gallery was incorporated by Act of Parliament (RSC 1952, c. 186) and was placed under the administration of a Board of Trustees appointed by the Governor General in Council; its function was to encourage public interest in the arts and to promote the interests of art throughout the country. Under this management, the Gallery increased its collections and developed into an art institution worthy of international recognition. Today, the Gallery administration comes under the aegis of the Secretary of State. The Board of Trustees, now composed of nine members representing all sections of Canada, meets twice annually. In 1960, the Gallery entered a new era in its history when the entire national collection and the staff and equipment necessary to its maintenance were transferred to new modern quarters-the Lorne Building in downtown Ottawa-which provides adequate well-lighted space for hanging the permanent collection and for displaying travelling exhibitions.

The Gallery's collections are of indisputable taste and quality. They have been built up along international lines and give the people of Canada an indication of the origins from which their own tradition is developing. The collection of Canadian art, the most extensive and important in existence, is continually being augmented by the purchase of works from the Biennials of Canadian Art and other sources. The collections include many Old Masters, among which are twelve acquired from the famous Liechtenstein collection; extensive war collections; the Massey collection presented to the Gallery during 194650 by the Massey Foundation; a collection of French paintings; prints and drawings; and diploma works of the Royal Canadian Academy. The prints and drawings collection consists of more than 5,000 items. The services of the Gallery include the operation of a reference library open to the public which contains more than 10,000 volumes and periodicals on the history of art and other related subjects.

The National Conservation Research Laboratory, established in 1964, provides technical information on works of art from public and private collections across Canada
and is responsible for the conservation of the national art collections. In addition, studies are carried out on the effects of environment on works of art and on the durability of artists' materials.

An active program of exhibitions, lectures, films and guided tours is maintained for visitors to the Gallery in Ottawa. The interests of the country as a whole are served by circulating exbibitions, lecture tours, publications, reproductions and filmstrips prepared by the National Gallery staff. The distribution of films is handled by the Canadian Centre for Films on Art. The Gallery promotes interest in Canadian art abroad by participating in international exhibitions such as the Biennials of Venice, Sazo Paulo and Paris, and by preparing major exhibitions of Canadian art for showing in other countries. At the same time it brings important exhibitions from abroad for circulation in Canada.

Performing Arts Schools.-Music, the most widespread of the performing arts (which also include opera, drama, ballet and dance), is a degree course in a number of universities. The following offer degree courses:-

```
Acadia University, Wolfville, N.S.-B.A. with music major, and Mus. B.
University of Alberta, Edmonton, Alta.-B.A. major and Mus. B.
Brandon College, Brandon, Man.-B. Mus. (Education)
University of British Columbia, Vancouver, B.C.-B.A. major and B. Mus.
University of Calgary, Calgary, Alta.-B. Mus.
Laval University, Quebec, Que.-B. Mus.
University of Manitobs, Winnipeg, Man.-B.A. major and B. Mus.
University of Montreas, Montreal, Que.-B. Mus. and D. Mus.
McGill University, Montreal, Que.-B. Mus.
University of Moncton (afflisted college Notre Dame d'Acadie), Moncton, N.B.-B. Mus.
Mount Allison University, Sackville, N.B.-B.A. major
Queen's University, Kingston, Ont.-B.A. major
University of Toronto, Toronto, Ont.-B. Mus., M. Mus. and D. Mus.
University of Western Ontario, London, Ont.-B.A. major
St. Francis Xavier University (affliated College Mount St. Bernard), Antigonish, N.S.B.A. major
Université Saint-Louis, Edmundston, N.B.-B. Mus.
University of Saskatchewan, Saskatoon, Sask.-B.A. major and B.Ed. music
Université de Sherbrooke, Sherbrooke, Que.-B.A. major (affiliated Collège du Sacré Coeur).
University of Victoria, Victoria, B.C.-B. Mus.
```

Advanced instruction in music is also given at the Conservatoire de Musique et d'Art Dramatique in both Montreal and Quebec. Opera may be studied at the Royal Conservatory Opera School of the University of Toronto where advanced students work in close collaboration with the Canadian Opera Company and also at the Conservatoire de Musique et d'Art Dramatique and the Banff School of Fine Arts (summer), Banff, Alta.

A Bachelor degree with specialization in drama may be obtained at Queen's University and the Universities of Alberta, Saskatchewan and British Columbia. Advanced instruction is also given during the summer at the Banff School of Fine Arts. The University of Toronto recently announced its first chair of drama, although it does not expect to offer degrees immediately. The University of British Columbia hopes to offer a postgraduate degree in theatre leading to the M.A. Some graduate courses are offered at the University of Saskatchewan and at the University of Alberta a degree course in drama is available. The National Theatre School of Canada offers complete practical training for talented students. It is bilingual, winter courses being held at Montreal, Que., and summer at Stratford, Ont. Three years are required for the acting course, and two for the technical and production studies. The Manitoba Theatre School at Winnipeg is also of importance.

The National Ballet School at Toronto is the only residential ballet school in Canada. It offers academic studies together with practical instruction. Professional instruction is also offered by two other major Canadian ballet companies, Les Grands Ballets Canadiens, Montreal, and the Royal Winnipeg Ballet, Winnipeg. The Canadian School of Ballet is located in Kelowna, B.C., and advanced ballet training is given during the summer at the Banff School of Fine Arts.

## Museums

Modern museums, in Canada and elsewhere, are breaking away from the old concept of being mere repositories and are assuming an important role as educational and cultural centres. They have an advantage over other agencies of education in that they are able to provide, for study and exhibition, actual, original objects as well as descriptions and pictures of such objects. Canadian museums of history and science offer many educational services to the public through exhibits, guided tours, lectures, and scientific and popular publications. The following museums have staff members who are specifically charged with organizing programs in education and providing extension services:-

Nova Scotia Museum, Halifar, N.S.<br>McGill University Museums, Montreal, Que.<br>National Museum of Canada, Ottawa, Ont.<br>Royal Ontario Museum, Toronto, Ont.<br>Saskatchewan Museum of Natural History, Regina, Sask.

Other museums that conduct educational and extension programs using the regular curatorial and administrative staff are:-

The New Brunswick Museum, Saint John, N.B.
Museum of the Province of Quebec, Quebec, Que.
The Manitoba Museum, Winnipeg, Man.
Provincial Museum of Natural History and Anthropology, Victoria, B.C.
Direct work with schools may involve the holding of classes within the museum or visits of museum lecturers, with exhibits, to the schools. More informal are the guided tours for visiting school classes, the lending of specimens, slides, filmstrips or motion picture films to schools, and the training of student-teachers in the educational use of the museum. A number of museums have special programs for children, not directly associated with school work. These include Saturday lectures and film showings, activity groups, nature clubs and field excursions.

For adults, museums offer lectures, film showings and guided tours, the latter usually available throughout the year. Staff members may be sent to give lectures to service clubs, church groups, parent-teacher associations and hobby clubs. The latter, such as naturalists' groups, mineral clubs and astronomy societies, may use the museum as their headquarters. Travelling exhibits are prepared for showing at local fairs, historical celebrations and conventions. At least seven Canadian museums have conducted regular radio or television programs and others have made occasional contributions. Some historical museums stage annual events during which the arts, crafts or industries represented by the exhibits are demonstrated to the public.

The National Museum of Canada.*-The National Museum originated in the Geological Survey of Canada and its early history is inseparable from that institution. The first united Parliament of Upper and Lower Canada met in Montreal in 1841. In July of that year the Natural History Society of Montreal and the Literary and Historical Society of Quebec petitioned the Government to carry out a geological survey. As a result, a resolution was passed in the Estimates on Sept. 10 to defray the expenses of a Geological Survey of the Province of Canada.

William E. Logan was appointed the first director of the Geological Survey in 1842. He and his assistant, Alexander Murray, undertook their first field work in 1843, and their collections formed the humble beginnings of the National Museum. Logan was much more than a mere geologist and his interests extended to other branches of natural science. His diaries contain accurate drawings of named plants. He wrote in his annual report for the

[^122]year 1852-53: "It may be a consideration whether a growing country like Canada could not afford to anticipate what future importance may require in the nature of a national museum and at some future time not far distant, erect an appropriate edifice especially planned for the purpose."

In the meantime, the officers of the Geological Survey continued to collect for the geological museum. In 1856, Elkanah Billings, a palaeontologist, was added to the staff, the first of a number of specialists, and the legislation passed that year to continue the work of the Geological Survey specified the establishment of a geological museum, open to the public, to exhibit specimens, books and instruments.

In 1874, the practice of recording the number of visitors to the Museum was commenced: from May 1874 to April 1875 the number of visitors was 1,017 and by the year ended April 1896 it had reached 31,595 . In 1874, the distribution of specimens of minerals, rocks and other natural history objects to schools was started with a donation to the Board of School Teachers of Elora, Ont. The first organized Museum lecture program was undertaken in 1912, with a series of lectures for young people after school; by 1915, Saturday morning lectures for children and evening lectures for adults-both features of the Museum program today-were in operation.

The scope of the Museum was enlarged in the "Act to make better provision respecting the Geological and Natural History Survey of Canada and for maintenance of the Museum in connection therewith", of Apr. 28, 1877. In that Act the Survey was instructed "to study and report upon the flora and fauna of the Dominion" and "to continue to collect the necessary materials for a Canadian museum of natural history, mineralogy and geology" As early as the Act of 1856, the Geological Survey of Canada had been authorized "from time to time" to distribute publications relative to the Survey. From this authority developed the Museum's celebrated series of scientific bulletins presenting the researches of its staff.

The Act of 1877 established the Geological Survey and the Museum on a continuing basis and permitted the appointment of specialists in connection with natural history research. John Macoun was appointed to establish the division of biology in 1882 . He was an eminent botanist who had accompanied the expedition of Sanford Fleming to explore Western Canada in 1871. Macoun's report of $187+$ laid the groundwork for the establishment of western Canadian agriculture. He also published a catalogue of Canadian birds. In 1895 under the third Director of the Geological Survey, George M. Dawson, the Museum entered the field of Canadian anthropology.

Prior to 1880, the Museum occupied several buildings in Montreal but that year the Geological Survey moved to Ottawa, occupying the former Clarendon Hotel on Sussex Street. Construction of the Victoria Memorial Museum building was started in 1904 and the Geological Survey moved in in 1910. The Museum began an expanded program of research and exhibition under the direction of $\mathbf{R}$. W Brock, then Director of the Geological Survey of Canada. Unfortunately this program was curtailed during World War I because the burning of the Parliament Building, in 1916, forced Parliament to occupy the Museum building until 1919. Later, expansion of the exhibition halls was handicapped by the Museum sharing its building with the National Gallery of Canada and the Geological Survey of Canada. However, in 1927, the Governor General in Council gave authority "to designate the museum branch of the Department of Mines as the National Museum of Canada"; it is now part of the Department of the Secretary of State. During the past 20 years, particularly after the appointment of Dr. Frederick J. Alcock as Chief Curator, the Museum has increased its research, education and exhibition staff in order to play a more important role in the cultural life of Canada and perform the tasks properly assigned to the National Museum of Canada. A new National Museum building will be constructed in the heart of Ottawa within the next few years.

The responsibilities of a great museum include the collection, preservation, storage and study of objects related to the various disciplines that fall under its purview. The next
step is the undertaking of research by specialists in those fields and the publication of their findings to increase the total knowledge of their subjects. Typically, museums exhibit items from their collections as intrinsically beautiful displays and also to teach the public the scientific background to the subjects. This leads to the educational program of museums which usually includes lectures, workshops, guided tours for children and activity groups, travelling exhibits, loans, library service, and radio and television programs.

The National Museum of Canada is now organized to present all these facets for the enjoyment and education of the people of Canada. It is divided into three Branchesthe Human History Branch, the Natural History Branch and the Science and Technology Branch. The Human History Branch contains the Divisions of Archaeology, Ethnology and Folklore, and History, together with the Canadian War Museum and the National Aviation Museum. The Natural History Branch contains the Divisions of Zoology, the National Herbarium, and Geology and Palaeontology. Services common to these two Branches are concerned with exhibitions, educational, technical and administration functions. In 1965-66 the staff totalled 226, including 56 administrative and professional personnel, 85 technical, operational and service personnel, 41 clerical personnel and 44 casual and prevailing rate employees.

The 1966 field research program in natural history included eleven expeditions to various parts of Canada. The work included investigations of intertidal invertebrates of the Strait of Juan de Fuca and Vancouver Island, shore fishes of Newfoundland, fauna of Sable Island, fishes and molliscs of the west coast of Hudson Bay, and birds of the Alberta Rockies and northern Ontario. Study of the fossil vertebrates of the Anderson and Horton River Valleys of the Northwest Territories was continued after the exciting discovery of the first fossil toothed birds in Canada and surveys of the Pleistocene faunas in Yukon Territory. Floral investigations were conducted in northern Ontario, southern British Columbia, northeastern Quebec and the Yukon Territory.

In addition, taxonomic studies of certain invertebrate groups were sponsored at Canadian universities, as well as field investigations of fossil fishes in the Maritimes, amphibians in Alberta, and dinosaurs in southeast Alberta, by university staffs. The National Museum also participated in a number of oceanographic eruises sponsored by the Fisheries Research Board and the Bedford Basin Oceanographic Institute to the eastern Pacific, Azores and Falkland Islands. Research in peat bogs on the Queen Charlotte Islands and the ecology of fluctuating northern lakes by European ecologists was also supported.

The education program continued with weekly lectures for adults, Saturday morning film programs for children, the junior nature club, the school loan collection, children's classes, guided tours, and the Canadian collection of nature photographs. During 1965 the National Museum recorded 314,800 visitors, the Canadian War Museum 188,020, the National Aviation Museum 119,310 and the National Aeronautical Collection at Rockcliffe 68,792.

During the past five years there has been a marked growth in the research carried out by the Human History Branch. Much of this is done under contract by scholars whose work is wholly or partly financed by the Museum, on the understanding that the Museum shall receive their collections and the right to publish their reports. This system has proved valuable in forging links between the National Museum and universities or other museums, and in developing archaeology and ethnology in Canada as well as in enriching the national collection and the Museum's publications. In 1965 members of the Archaeology Division did field researches in Nova Scotia, southeastern Ontario, near South Indian Lake in Manitoba, in the Yukon Territory and on Victoria and Banks Islands in the Northwest Territories. Additional field work was done under contract in Newfoundland, Nova Scotia, Quebec, Ontario, Manitoba, Saskatchewan and Alberta and in the Arctic on Ellesmere Island, near Wakeham Bay and Igloolik. The Ethnology Division continued
its research program, both by staff members and by contract in linguistics, ethnohistory and the ethnology of the Algonkians, Athapaskans, the West Coast and Plateau Indians and the Eskimo. A conference on Band organization was held at the National Museum in late August, attended by 14 leading ethnologists from Canada and the United States. The Folklorist returned to her studies in the Gaspe region and supervised contracts for research in the Maritimes and in the Prairie Provinces. The History Division gave four contracts for the pursuit of original research, continued studies for the preparation of exhibits and made progress in the task of cataloguing.

The exhibition program in 1964-65 included a new Indian Hall and additional work in the Hall of Birds. The education program continued with weekly lectures for adults, Saturday morning film programs for children, the junior nature study club, the school loan collection, children's classes, guided tours, and the Canadian collection of nature photographs.

In 1961, the Government announced the intention to establish, as a third branch of the National Museum, a Museum of Science and Technology, which would incorporate the existing National Aviation Museum. Funds for the inauguration of this project were provided in the fiscal year 1966-67 and a Director was appointed, who will be responsible for planning the display and research activities of the new institution.

## Statistics of Museums and Art Galleries

In response to the need for information concerning the existence and operation of museums, art galleries and similar institutions in Canada, a survey was conducted by the Dominion Bureau of Statistics with the assistance of the Canadian Museums Association, provincial government departments concerned with museums and other interested individuals. The results are given in DBS publication Museums and Art Galleries 1964 (Catalogue No. 81-529), and are summarized here in Table 1. Information was collected from a wide variety of institutions and organizations, including art galleries, art exhibit centres; historical museums, historic houses, archives; natural history museums, botanical gardens, zoological parks, aquaria, planetaria; preservation projects, public libraries.

Of the 385 institutions reporting, 44 conducted educational programs for the communities in which they were located, enrolment in the study groups numbering 18,454 children and 5,974 adults; 67 conducted extension services to other communities; 128 institutions reported the conduct of such public events as lectures, film showings, guided tours, etc., with total attendance of close to 855,000 ; and 101 provided local library service.

## 1.-Museums, Art Galleries and Similar Institutions elassified by Type, Governing Authority and Province, 1564

| Type and Governing Authority | Nfid. | P.E.I. | N.S. | N.B. | Que. | Ont. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. |
| Arti..... | 1 | $\stackrel{3}{3}$ | 17 | 5 | 16 30 | 25 113 |
| Science ${ }^{\text {a }}$. |  |  | 2 |  | 11 | 12 |
| Totals... | 2 | 5 | 21 | 10 | 57 | 154 |
| Independent. . . | - | 3 |  | 5 | 27 | 46 |
| Municipality......... | - | 2 | 7 | - | 4 | 53 |
| Provincial Government. | 1 | - | 7 | 1 | 5 | 19 |
| Educrtional institution., | 1 | 二 | 2 | 1 | 10 | 14 |
| Federal Government. . | - | - | 5 | $\frac{1}{3}$ | ${ }_{7}^{4}$ | 12 |

For footnotes, see end of table.
1.-Museums, Art Galleries and Similar Institutions classlfied by Type, Governing Authority and Province, 1564-concluded

| Type and Governing Authority | Man. | Sask. | Alta. | B.C. | Y.T. and N.W.T. | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. |
| Artl.... | 8 | ${ }_{17}^{5}$ | 7 25 | 5 | $\overline{2}$ | 71 261 |
| $\xrightarrow[\text { Science }{ }^{\text {a }} \text {. }]{ }$ | 4 | 17 | 27 | 11 | 2 | 53 |
| Totals. | 16 | 27 | 39 | 56 | 2 | 385 |
| Independent. |  |  | 18 | 27 | 2 | 150 |
| Municipality. | 2 | 6 | 8 | 10 | - | 8649 |
| Prorincial fovernment. | - | 5 | 2 | 4 | - |  |
| Educational institution. |  |  |  |  |  | 30 |
| Federai Goveroment. | 3 | 4 | 3 | 3 | - | 37 |
| Combined. | 1 | 2 | 5 | 3 |  |  |

## ${ }^{1}$ Includes art galleries and art exhibit centres. <br> ${ }^{2}$ Includes bistorical museums, historic houses and preoervation projects. planetaris. <br> Section 2.-The Educational Functions of the Canadian Broadcasting Corporation and the National Film Board

Educational Functions of the Canadian Broadcasting Corporation.-Many hours of educational and semi-educational programs are broadcast annually by the Canadian Broadcasting Corporation's radio and television facilities. Whether these programs are directed to children or adults, entertainment is combined with information whenever possible. Spoken-word programs, presented as readings, talks, discussions, documentary programs, dramatizations or in forms combined with music, cover a very wide range of interests.

Specially planned child and youth programming appeals to all age groups from preschool to teens as in television's Through the Eyes of Tomorrow and Jeunesse Oblige. Educational programs include credit courses on Cours-universitaire and many sehool broadcasts produced in co-operation with the various provincial educational authorities, as well as informal education programs. In 1965-66 University of the Air studied the Ecological Viewpoint; the Massey Lectures covered the subject of Politics of Privation; and Project ' 66 discussed the Canadian mood. In 1966-67, an educational series consisting of highlights of the previous season's school telecasts is being presented on Sunshine Semester.

Programs of an adult education nature are presented frequently by the English networks and co-operation in program planning is received from various educational organizations. The CBC is an active participant in the Joint Planning Commission, a body established by the Canadian Association for Adult Education for exchange of information and co-ordination of plans for adult education in Canada. As illustrations of special-interest programming, five one-hour instructional courses on farming were produced by the CBC Farms and Fisheries Department in 1965-66 in co-operation with the Departments of Agriculture of the three Prairie Provinces; and the French network produced four special programs on farm management in co-operation with the Quebec Ministry of Agriculture, designed to help the transition of farmers in Quebec from the small family holding to something more along the lines of the industrial or commercial enterprise. Religious programming ranges from devotional broadcasts to studies of religion in the community and the changing world; outstanding in 1965-66 were Ferment with Paul Tillich and the Bishop of Woolwich, and Bilan de Vatican II which, on its second showing, attracted a raillion viewers.

A number of public affairs television programs are designed to analyse and offer comments and opinions on the events and trends of the day; this, combined with their fast-moving format and their controversial approach, attracts large audiences who greatly enjoy the programs. Thus in 1965-66 The Public Eye discussed Capitalism Today and Defis Nouveaux studied the Problem of the Aging in Canada. The Sixties examined Canadian Immigration and the Problem of Fresh Water Supplies in North America. This Hour Has Seven Days and Le Sel de la semaine presented ideas and opinions about current events, using comedy, music and satire as regular techniques. CBC Newsmagazine presented weekly interview and documentary programs. Camera 65 on the French television network reported on national and international events and actualities. In the 1966-67 season, Twenty Million Questions, a new public affairs program, will keep Canada's $20,000,000$ citizens informed about major political issues and other topical matters of national concern.

Special programs are broadcast on radio covering the three-day Winter Conference of the Canadian Institute on Public Affsirs, which examines sociological questions in open meetings and group discussions. The summer evening sessions of the annual weeklong Couchiching Conference have been broadcast for a number of years. This Conference, organized jointly with the Canadian Institute on Public Affairs, examines Canadian and international affairs in open meetings and group discussions.

The French radio network presents Femina five times a week for women listeners and also broadcasts a number of weekly programs dealing with fine arts, music, literature, theatrical arts, sciences, religion and philosophy under the auspices of Le Service des émissions éducatives et d'affaires publiques. On the English network The Feminine Touch, an anthology of writings by women, including fiction and non-fiction, verse and prose, was broadcast during the summer of 1966. Take Thirty, a week-day television show for women, has a different 'llavour' on each program-entertainment and interviews of performers; travel topics and features on events in Canada and abroad; cooking, child care and household management; discussions on social problems; and interviews with men and women from the sporting world. In the 1966-67 season, Take Thirty will have programs filmed on location in London, Paris, New York, Newfoundland and five African countries. Its closest radio counterpart is Trans-Canada Matinée.

A few of the programs for the $1966-67$ season include such favourites as CBC television's major cultural series Festival, which enters its seventh season presenting drama and concert programs, and Show of the Week, which is a major showcase for a great variety of performers such as Wayne and Shuster and Juliette. A World of Music, a new variety series, features music from many lands sung by performers from all over the world, and an Anthology series gives new and established Canadian writers an opportunity to air unpublished short stories, poetry and plays. Centennial programs include The Reluctant Nation, which recreates important historical events and personalities that shaped Canada's development during the 1880s and '90s; Chansons, a television musical salute to the Centennial of Confederation, which spotlights authentic folk music presented by top Canadian artists and filmed in various colourful locales from St. John's to Victoria; full coverage of EXPO 67; the Pan-American Games in Winnipeg; Camera Canada's documentaries; and Canada 100. William Ronald, one of Canada's leading painters, will again be host as The Umbrella begins its second season of exploration of the arts; and Life and the Land, a half-hour country and gardening program bringing items of national and local interest to all viewers, will continue on the English network.

Educational Functions of the National Film Board.-The National Film Board, an agency of the Federal Government, was established by Act of Parliament in 1939 and reconstituted by the National Film Act in 1950. In the years since its establishment, the Board has grown from a supervisory body over Canadian Government motion picture activities to a national documentary film-producing and -distributing organization whose films about Canada are seen wherever people may freely assemble. The Board produces
and distributes filmstrips and still photographs on Canadian themes in accordance with its primary function outlined in the Act "to initiate and promote the production and distribution of films in the national interest" Films are produced primarily in the English and French languages and, whenever possible, foreign-language versions are prepared to increase the usefulness of Board films in foreign countries.

The 16 mm . community film program is based on a nation-wide system of film circuits, film councils and libraries, strongly supported by organizations and individuals engaged in community activities. There are more than 700 national, provincial and community film distribution outlets from which thousands of 16 mm . prints are available for public use throughout the country. These prints are acquired for circulation by purchase or by loan from the Board.

A large part of the 16 mm . community film audience is reached through classroom showings, indicating progress in the development of audio-visual aid programs in Canadian schools and universities. Another noticeable trend is the more selective use of films by community organizations and groups for particular purposes. This is attributed in part to the availability of Board productions which present series of film studies related to central themes, and to the availability of a broad range of topics which include individual films particularly suited to group objectives and programs.

Films produced by the Board are shown in commercial theatres and on television in Canada and abroad, and newsreel features are also issued regularly for theatrical and television purposes. Distribution of theatrical subjects is arranged by contract with commercial distributing organizations.

Series of original films are shown regularly over English-language and French-language television networks in Canada. Individual films from the Board's extensive general library are available to CBC and privately operated stations. Abroad, because of expanding television facilities in many countries, Board films are seen by audiences which could not otherwise be reached.

In addition to commercial distribution through theatres and television in other countries, 16 mm . print circulation is carried on through posts of the Departments of Exteraal Affairs and Trade and Commerce, through National Film Board territorial offices at Londom in England, Paris in France, New York, Chicago and San Francisco in the United States, New Delhi in India, and Buenos Aires in Argentina, as well as through libraries operated by various education agencies. Hundreds of prints of National Film Board films are also sold in other countries each year. Exchange agreements are in effect between the Board and government film-producing organizations in other lands; this means that films of various nations are freely exchanged with those of Canada, aiding international understanding.

The National Film Board maintains a library of more than 150,000 still photographs, which are available at nominal cost to magazines, newspapers and other periodicals wishing to present current information about Canada.

## Section 3.-The Canada Council

The Canada Council was created by the Government of Canada in 1957 to "foster and promote the study and enjoyment of, and the production of works in, the arts, humanities and social sciences" Its task is carried out mainly through a broad program of fellowships and grants of various types. It also shares the responsibility for Canada's cultural relations with other countries and administers, as a separate agency, the Canadian National Commission for UNESCO.

The Council is an independent agency which reports annually to Parliament through a member of the Cabinet, but sets its own policies and makes its own decisions within the terms of the Canada Council Act. It is made up of 21 members appointed by the Governor
in Council. The chairman and vice-chairman serve for terms not exceeding five years and other members for terms of three years. The Council usually meets at least five times a year. The day to day administrative work is carried out by a permanent staff in Ottawa, headed by a director and an associate director who are appointed by the Governor in Council.

Income.-The Council's income is derived mainly from two funds, originally of $\$ 50,000,000$ each, set up by Parliament when the Council was created. The University Capital Grants Fund, which is now nearing depletion, has enabled the Council to help the universities expand their physical facilities at a crucial period by awarding them up to 50 p.c. of the cost of eligible buildings. The Council's main source of operating income is the Endowment Fund, of which only the interest may be used. It yields some $\$ 3,100,000$ annually and out of this amount the Council must normally finance its various programs and its administrative expenses, as well as those of the Canadian National Commission for UNESCO. However, as its resources had become inadequate to meet the growing needs of the arts, humanities and social sciences, the Council received from the Canadian Goverament, in April 1965, an unconditional grant of $\$ 1 C, 000,000$. This grant and the interest earned on it are adding to the income of the Endowment Fund for a period of a few years.

Assistance to the Arts, Humanities and Social Sciences.-The Canada Council's assistance is directed to both individuals and organizations. Assistance to individuals is mainly in the form of fellowships, scholarahips and research grants. In eight years, the Council has awarded scholarships and fellowships at the master's, doctoral and postdoctoral levels to almost 4,000 scholars in the humanities and social sciences, and to more than 1,200 performing and creative artists. Assistance to organizations, mostly in the arts, takes a large proportion of the revenue from the Endowment Fund.

In the year ended Mar. 31, 1966, the Council devoted approximately $\$ 2,856,000$ to the humanities and social sciences, of which $\$ 1,006,000$ financed 736 fellowships at the pre-doctoral and post-doctoral levels, and $\$ 1,250,000$ was applied to grants in aid of research, university libraries, meetings of scholars and artists, visiting lecturers, publication of scholarly works and other forms of assistance. In the arts, the Council spent $\$ 3,441,000$, of which $\$ 425,000$ was used to finance 135 scholarships and fellowships and $\$ 3,016,000$ was applied to grants, including about $\$ 699,000$ for music, $\$ 271,000$ for festivals, $\$ 602,000$ for the theatre, $\$ 564,000$ for dance and opera, $\$ 147,000$ for the visual arts, $\$ 234,000$ for service and training organizations and $\$ 84,000$ for publications.

Apart from its own programs, the Council administers on behalf of the Canadian Government a program of scholarships for students, scholars and artists from Frenchspeaking countries (at present, France, Belgium and Switzerland) wishing to come to Canada. In 1965-66, awards made by the Council under this program totalled $\$ 613,000$.

In the fields of engineering, medicine and acience, the Council has been offering to qualified Canadian applicants a few research fellowships for work in Canada. These were financed by a special fund provided by a private donor. In the year 1965-66, they amounted to approximately $\$ 38,000$.

Under its power to "make awards to persons in Canada for outstanding accomplistments in the arts, humanities or social sciences", the Council awards annually its own Canada Council Medal and the Molson Prize which is financed by funds from the Molson Foundation. It also finances the annual Governor General's Literary Prizes, which are awarded by an autonomous committee.

UNESCO.--The Canada Council Act provides for certain functions in relation to the United Nations Educational, Scientific and Cultural Organization. The Council has accordingly established a National Commission for UNESCO and provides its secretariat and budget. As an agent of the Council, the National Commission co-ordinates UNESCO
program activities abroad and administers a small program in furtherance of UNESCO objectives. In the year ended Mar. 31, 1966, the Council spent approximately $\$ 135,000$ through the National Commission for these purposes.

## Section 4.-Library Services

The National Library.-The National Library of Canada came into existence formally on Jan. 1, 1953 by the proclamation of the National Library Act (RSC 1952, c. 330 ). On the same date it absorbed the Canadian Bibliographic Centre, which had been engaged in preliminary work and planning since 1950. The Act established a National Library Advisory Council, consisting of the National Librarian who serves as chairman, the Parliamentary Librarian, and twelve appointed merabers, at least one of whom must be from each of the ten provinces.

By 1966, although the Library was still housed in temporary quarters and only a limited purchasing program could be undertaken, the book collection consisted of over 300,000 volumes, supplemented by microcopies of more than 100,000 additional titles. Under the terms of the Copyright Act and the Library's own Book Deposit Regulations, 8,128 titles were received in the year ended Mar. 31, 1966, 5,968 of which were related in some direct way to Canada.

Canadiana, the Library's monthly catalogue of new books and pamphlets relating to Canada, described over 12,000 items in 1965; these included trade and general publications and official publications of the federal and provincial governments. Canadiana has been published since 1950 and is cumulated annually; a cumulated index covering the period 1950-62 was published in 1965.*

The National Union Catalogue lists 9,500,000 volumes in 224 government, university, public and special libraries in all provinces. New accessions are reported regularly by these libraries, and the Catalogue thus forms a continuously up-to-date key to the main book resources of the country. More than half a million additions were reported to the Catalogue in 1965-66. During the year ended Mar. 31, 1966, the Reference Division was asked to locate nearly 40,000 titles and it is noteworthy that copies of 80 p.c. of them were found in Canadian libraries. About one third of the requests were for books in the field of science and technology and 80 p.c. were for books published since 1925.

The National Library also publishes bibliographies and the annual cumulation of the Canadian Index to Periodicals.

A permanent National Library and Archives Building is under construction on Wellington Street, west of the Parliament Buildings in Ottawa; it will be completed late in 1966.

The National Science Library.-The National Research Council Library serves as the library for the Council and as the National Science Library of Canada. Plans for developing a central scientific library were proposed as early as 1924 by the Honorary Advisory Council for Scientific and Industrial Research, established in 1916 and now known as the National Research Council (see pp. 384-391). The Library grew slowly until 1928 when the Council's first research laboratories were set up. Since then it has been developed to parallel the growth and expansion of the laboratories and the national interests and activities of the Council with the result that in 1953, under an agreement with the more recently established National Library, the National Research Council Library formally assumed responsibility for national library services in the fields of science and technology. By 1965, the Library's collection, comprising over 600,000 volumes, was growing at the rate of 150,000 items a year and included jouraals and other serial publications, books, pamphlets and technical and research reports. The bulk of this material is housed in the main Library with smaller and more specialized collections in six branch Libraries.

[^123]The resources of the Library are made available by means of an extensive inter-library loan and photocopying service. For purposes of current awareness, the Library issues twice a month its Recent Additions to the Library, and a list of Serial Publications in the Library is also issued at frequent intervals through the use of data processing equipment. Reference and research services include answering requests for scientific information, literature searches and the compilation of abstracts and bibliographies, and the identification and location of obscure publications.

The Canadian Index of Scientific Translations, a card index to the location of completed English translations in Canada and other countries, is maintained by the Library. Translations of scientific articles prepared by the Library's Translations Section are listed and made available in Canada and abroad. A complete English translation of the Russian journal Problemy Severa (Problems of the North) is also the responsibility of this Section.

The National Science Library is responsible for the publication of the Union List of Scientific Serials in Canadian Libraries and the Directory of Canadian Scientific and Technical Periodicals.

Public Libraries.-Provincial governments have jurisdiction over public libraries but these are generally administered and regulated by municipal authorities; exceptions are Newfoundland and Prince Edward Island where the provincial governments maintain the public library service throughout the province. Municipal libraries serve the urban population and provincial and regional libraries serve the more widely scattered population. Summary results of the annual public library survey for 1964 are given in Table 2, with comparable totals for 1963. Circulation of books was 4.0 per capita in the later year and current operating payments were $\$ 1.40$, compared with 3.7 per capita and $\$ 1.28$ in 1963. Of the total full-time staff in 1964, about one quarter were professional librarians.
2.-Summary Statistics for All Public Librarles, 1964 with Totals for 1963

| Province or Territory | Population Served | Libraries | Stocks of Books. Periodicals and Parmphlets | Circulation | Current Operating Paymenta | Full- <br> Time <br> Staff |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | \$ | No. |
| Newfoundland. | 481,000 | 3 | 327,769 | 764,827 | 199, 201 | 40 |
| Prince Edward Island | 107,000 | 1 | 110,651 | 250.631 | 52,326 | 6 |
| Nova Scotia...... | 492, 102 | 14 | 480, 290 | 2,574,238 | 682,989 | 107 |
| New Brunswick. | 226.159 | 7 | 225.166 | 1,352, 655 | 288,500 | 35 |
| Quebec.. | 2,956,788 | 230 | 3,160,043 | 6,154,366 | 2,848, 667 | 333 |
| Ontario. | 5,820,577 | 314 | 9,220,859 | 41,723,022 | 14,717,813 | 1. 667 |
| Manitoba. | 529,998 | 18 | 656,300 | 3,367,536 | 1,146.269 | 1172 |
| Saskatchewan. | 425, 176 | 63 | 848,840 | 2,892,328 | 1,320,723 | 173 |
| Alberta. | 927,580 | 158 | 1,710,075 | 8,488,375 | 2,099, 159 | 245 453 |
| British Columbia. | $1,413,073$ 12,000 | 79 1 | $2,203,084$ 38,600 | 10,609,781 | $3,590,665$ 48,507 | 45 |
| Totals, 1964. | 13,381,458 | 88 | 18,981,487 | 76,177,759 | 27,001,319 | 3,204 |
| Totals, 1853. | 13,236,808 | 884 | 16,463,264 | 70,418,478 | 24,187,450 | 3,116 |

University, College and School Libraries.-Libraries in 77 universities and colleges having enrolments of 100 or more students reported over $10,000,000$ volumes or 63.9 volumes per student in 1963-64, compared with 62.9 in 1962-63. Expenditures were $\$ 90.71$ per student, an increase of $\$ 20.88$ over the previous year. Full-time staff increased by 338 in the same comparison but the proportion of professional librarians was slightly lower in 1963-64 at 29.9 p.c.

## 3.-Lharies in Universities and Colleges, by Province, Academie Year 1963-64 with Totals for 1963-43

| Province | Libraries | Volumes | Enrolment Served | Expenditures per Full-Time Student ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | \$ |
| Newfoundland. | 1 | 113,597 | 2,447 | 67.78 |
| Prince Edward Isiand | 2 | 30,805 | 841 | 23.19 |
| Nova Seotis......... | 9 | 665,182 | 8,290 | 66.24 |
| New Brunswick | 4 | , 301, 9001 | 6,149 | 63, 40 |
| Quebec. | ${ }_{27}^{15}$ | 2,658,874 | 50,279 | 122.58 |
| Manitoba. | 8 | -505,482 | 9,431 | 57.97 |
| Saskatchewan. | 3 | 335, 841 | 10,280 | 58.85 |
| Alberta....... | 4 | 505,304 | 12,866 | 112.75 |
| British Columbia. | 4 | 862,237 | 19,111 | 83.63 |
| Totals, 1863-64. | 77 | 10,225,881 | 160,072 | 90.71 |
| Totals, 1962-88. | 73 | 9,085,488 | 144,513 | 69.83 |

[^124]In 1963-64 only 53.2 p.c. of the reporting 4,892 elementary and secondary schools had centralized libraries- 58 p.c. of the secondary schools and 24 p.c. of the elementary schools. Their total bookstock was $7,625,832$ or 5.2 books per pupil served, compared with 4.8 in 1962-63. Payments for books and other library materials ranged from $\$ 0.95$ per pupil served in New Brunswick to $\$ 5.18$ in Saskatchewan, the average for Canada being \$2.63. Professional school librarians numbered 211, an increase of almost 18 p.c. over the previous year but still far short of requirements. In an attempt to fill part of the need, some professional librarians supervised several school libraries rather than that of an individual school.

## 4.-Centralized School Libraries, by Province, Aeademie Year 1863-84 with Totals for 1562-63

| Province | Librariea | Books | Enrolment Served | Payment for Books per Pupil |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | \$ |
| Newfoundland. | 4 | 3,812 | 1,644 | 1.45 |
| Prince Edward Island | 7 | 11,982 | 3,759 | 1.39 |
| Nova Sootia, . | 59 | 121,691 | 33,097 | 0.97 |
| New Brunswick | 38 | 109,784 | 25,308 | 0.95 |
| Quebec. | 944 | 2,298,269 | 426,584 | 2.18 |
| Ontario. | 927 | 3.119,053 | 603,955 | 2.90 |
| Manitobs. ..... | 73 | 292,968 | 48,356 | 3.03 |
| Sankstchewen. | 67 | 204,443 | 29, 812 | 5.18 |
| Alberta......... | 268 | 677,376 | 127,429 | 2.96 |
| British Columbia. | 215 | 786,454 | 160,915 | 2.50 |
| Totals, 1983m4. | 2,602 | 7,625,832 | 1,481,919 | 2.63 |
| Totals, 1962-63. | 2,067 | 5,768.067 | 1,213,193 | 2.45 |

Libraries in provincial post-secondary institutions were surveyed for the first time in 1963-64; they included libraries in 35 technical institutes across Canada, 66 of the 107
écoles normales in Quebec, 10 teachers colleges in Ontario and one each in Nova Scotia, New Brunswick and Manitoba. Of the 35 technical institutes, 27 reported centralized libraries; bookstock per pupil was 14.2 volumes and operating expenditures $\$ 15.40$ per pupil. The 68 écoles normales in Quebec reported 9,200 students, 65.5 volumes per student, and an operating expenditure of $\$ 27.97$.

## 5.-Mbraries In Technlcal Institutes and Teachers Colleges, 1963-641

| Province | Full-Time Earolment | Books, Periodicals and Pamphlets | Staff | Total Operating Expenses of Libraries |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | \$ |
| Newfoundland. | 524 | 1,150 | 1 | 5,420 |
| Nova Scotia. | 441 | 11,676 | 1 | 14.935 |
| New Brunswick | 1,720 | 35,696 | 1 | 26,300 |
| Quebec. | 14.883 | 767,056 | 68 | 864.191 |
| Ontario.. | 10,308 | 135, 388 | 13 | 132,214 |
| Manitoba. | 600 | 8.359 | 1 | 10,600 |
| Saskatcbewan | 1,055 | 13,004 | 6 | 49, 689 |
| Alberta. | 3,134 | 17.709 | 4 | 50,300 |
| Britislı Columbia. | 1,399 | 10,595 | - | 1,980 |
| Totals. | 34,044 | 1,000,631 | 95 | 655,620 |

${ }^{1}$ Includes statistics of 28 technical institutes and 79 teachers colleges.
Library Education.-In 1965. the five Canadian library schools awarded 318 Bachelor of Library Science degrees, an increase of 11.2 p.c. over 1964. Despite this increase, many more professional librarians are needed to raise service to acceptable standards, especially in public and secondary school libraries. Table 6 contains data on 78 p.c. of the graduates, three quarters of whom were women. University libraries absorbed 50 p.c. of these graduates, 31 p.c. secured pasitions in public libraries and the remainder now serve in government and special libraries or in other countries. Quebec and Ontario employed about 62 p.c. of them. Median beginning salaries ranged from $\$ 5,265$ in the Atlantic Provinces to $\$ 5,700$ in the Prairie Provinces. School librarians received almost $\$ 1,500$ more per annum than public librarians since the former often have teacher training as well as teaching experience.

## 6.-Library School Graduates, 1565 with Totals for 1964

| Library School at- | Graduates |  | Destinations |  |  |  | Median Bexinding Salary |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Male | Fermale | Public Library | Oniversity Library | School Library | Other and Unknown |  |
|  | No. |  |  |  |  | No. | \% |
| McGill University.... | 68 28 | 58 20 |  | 38 |  | 9 3 | 5,325 5,400 |
| University of Montreal. | $\stackrel{28}{9}$ | 20 4 | 12 | 25 5 | 4 2 4 | $\begin{array}{r}3 \\ 5 \\ \hline\end{array}$ | 5,400 8,560 8,507 |
| University of Toronto.. | 7 | 70 | 39 | 35 | 13 | 11 | 5,507 |
| University of British Columbia | 12 | 37 | 16 | 22 | 4 | 3 | 5,672 |
| Totals, 19651........ | 62 | 187 | 78 | 135 | 35 | 31 | 5,433 |
| Totals, 19641. | 68 | 172 | $\$ 1$ | 103 | 18 | 58 | 5.247 |

[^125]
## 7.-Median Salaries of Librarians in Professional Positions, 1964

| Position | Public Libraries in Centres of over 25,000 Population | Regional and Co-operative Public Libraries | Provincial Public Library Services | University and College Libraries (1963-64) |
| :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ |
| Chief Librarian. | 7,889 | 7,036 | 8,875 | 8,875 |
| Assistant Chief Librarian. | 7,875 | 5,958 | 8,000 | 8,687 |
| Division, Department or Branch Head. | 7,022 | 5,208 | 6,250 | 6,981 |
| General Librarian. | 5,667 | 5,809 | 7,750 | 5,303 |



One of the nine floors of the National Science Library of Canada. Its collection of well over half a million books, journals, articles and reports on scientific and technological subjects is growing at the rate of from 500 to 700 items daily.

## CHAPTER VIII.-SCIENTIFIC AND INDUSTRIAL RESEARCH*

## CONSPECTUS

Section 1. The National Research Council Pageof Canada.....384
Section 2. Research in the Atomic Energy Field, ..... ..... 391
Section 3. Space Research in Canada.... ..... 397
Section 4. Research in Geophysics andAgtronomy.....
Section 5. Other Scientific and Indugtrial
Section 5. Other Scientific and Indugtrial Research Faclifties
Page
Page
Subsection 1. Federal Organizations. ..... 401
Subsection 2. Provincial Organizations ..... 401
Subsection 3. University Research ..... 404
Subsection 4. Indurtrial Research. ..... 408
Section 6. Federal Government Expend- trureg on Scientific Activities. ..... 409

The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.

The characteristic problems of this country, particularly its large area, its small population and its unique industrial structure, have led to a typically Canadian organization of research. Early research was, of course, related to the primary industries. Geological mapping and agricultural research were almost the only areas of activity until the beginning of the present century. In 1898 research in the field of fisheries was assigned to an independent honorary board which has continued to the present as the Fisheries Research Board. In 1916 the Federal Government set up the National Research Council; its early duties were to encourage and stimulate research in the universities through grants and scholarships and it entered active research only with the establishment of its own laboratory system in the late 1920 s and early 1930s. Great expansion in scientific research took place during the War when the National Research Council assumed the responsibility for research for the three Armed Services including the development of atomic energy. At the end of the War, the Council returned to its previous activities-the promotion of research in the universities and research for secondary industry. In 1947, the Defence Research Board was set up in the Department of National Defence with responsibility for military research (see Chapter XXVI). In 1952, the Crown corporation. Atomic Energy of Canada Limited, was established to proceed with the development of atomic energy in Canada, and certain other Crown corporations, such as Eldorado Mining and Refining Limited, Polymer Corporation Limited and Canada's largest national utility, the Canadian National Railways, developed important research programs.

Until the 1960s, industrial research was slow to develop in Canada, although certain large industries, particularly the chemical industry and the pulp and paper industry, had long histories of successful research effort. Research councils or foundations were set up by several provinces to improve industrial production efficiency (see pp. 401-404); of these, the Ontario Research Foundation and the British Columbia Research Council, although established under provincial legislation, are self-governing institutions engaged in research and development on contract for manufacturers, departments of government and on their

[^126]own account, and derive their current revenue mainly from sponsored research. The Pulp and Paper Research Institute of Canada (see Forestry Chapter) is the one major research association that operates on a co-operative basis; its operating funds are provided by industry and its facilities by the Federal Government and McGill University, all three vitally interested in ensuring that this industry maintains its competitive position in world markets. However, through the years the primary resource base of industry generally was not conducive to the establishment of industrial research laboratories. Also, the prevalence of foreign-owned manufacturing companies exerted considerable influeace on the development of industrial research. Canadian subsidiaries of foreign companies had ready access to the research and development results of their parent companies and Canadian companies had little incentive to establish their own laboratories or to develop products specifically for the Canadian market. But now, Canadian industry across the country is greatly extending research facilities and becoming much more aware of the advantages to be gained therefrom. To meet the challenge of competition from other countries in the manufacture of ultra-modern production, it is impressively stepping up its own scientific and technical studies. The Ontario Research Community at Sheridan Park in Metropolitan Toronto is a virtual breakthrough for Canadian industry. So is the research centre at Pointe Claire in Metropolitan Montreal. Such industrial research centres as these will ensure that Cabadian industries remain competitive and, perhaps more important, will permit Canadian graduate students to find both challenge and creative opportunity at home. The value of buildings already built or under construction at Sheridan Park is $\$ 27,000,000$ and several sites are still available. Elsewhere in the country a number of new industrial research centres have been established, and others are in the planning stage, to conduct basic and applied research in a wide range of scientific disciplines.

Thus, there are three main sectors of research in Canada-government research, university research and research in industry. These three elements are covered in some detail in the following Sections and Subsections.

Mechanism for the Federal Science Policy.-In the federal sphere, the ultimate authority for policy on science resides in the Cabinet. To exercise this authority there was established by the National Research Council Act (RSC 1952, c. 239, as amended) a Cabinet committee known as the Committee of the Privy Council on Scientific and Industrial Research. This Committee comprises those Cabinet Ministers having departments with major scientific responsibilities and certain other Ministers who have an indirect concern with scientific affairs. These federal departments and agencies advise the Privy Council Committee on the scientific aspects of their own departmental responsibilities and on the organization and support of research required for their own purposes. For many years, the National Research Council, on the other hand, advised the Committee on general science policy, particularly on research in the universities, in industry and in fields not specifically the responsibility of the departments or agencies. Then, in 1949, the Privy Council Committee broadened the structure of its advisory mechanism by the addition of an advisory body of senior officials to which it might turn for joint advice on the formulation and conduct of government scientific policies.

In 1964, a move was made toward integration and stimulus of research with the creation of a Science Secretariat in the Office of the Prime Minister. Established as a result of the recommendations of the Royal Commission on Government Organization and those of Dr. C. J. Mackenzie, former President of the Nationa! Research Council, the Secretariat has the task of assembling, digesting and analysing information related to the Government's scientific and technologieal activities, including their interrelationships with university, industrial and provincial scientific establishments. In 1966, the Science Council of Canada was established, drawing its professional and administrative support from the Science Secretariat. Exclusively advisory, the Council will call for intensive studies of science and technology in Canada, serving as a focus for information and advice useful to the people of Canada in formulating policies and plans for the future. It will delineate
in broad terms for the first time those fields of science and technology that may be expected to contribute most to the country's economic and social objectives and indicate how their development can best be organized and supported. Membership is drawn from industry, the universities and government.

## Section 1.-The National Research Council of Canada*

Organized research in Canada on a national basis dates from 1916 when the Government of Canada estabished the National Research Council. From an initial budget of $\$ 91,600$ (only $\$ 50,375$ was actually expended) to one of $\$ 74,000,000$, the Council has expanded until now it has some 45 Associate Committees studying a wide range of problems, supports the research efiorts of 2,500 university scientists and awards 1,900 scholarships, bursaries and postdoctorate fellowships.

The planning and integration of research work, organization of co-operative studies, postgraduate training of research workers, and prosecution of research through grants to university professors formed the basis of the Council's work from 1916 to 1924. As early as 1918, the creation of a central research institute to carry on research in pure science in relation to standards of measurement, quality and composition of material, and research in science applied to the industries of Canada, had been urged and a special committee of Parliament endorsed the proposal. Temporary quarters were secured in 1925 and research on magnesian refractories for steel furnaces was carried out so successfully that an industry established during World War I was re-established on a large scale. As a result of this achievement, the Government in 1929-30 provided funds for new research facilities. The National Research Building on Sussex Drive in Ottawa was opened in 1932 and in 1939 construction was begun on an aerodynamics building located on the Montreal Road, just east of the city. This site now comprises some 400 acres and houses most of the Council's laboratories. A prairie Regional Laboratory built on the campus of the University of Saskatchewan in Saskatoon has been in operation since June 1948 and an Atlantic Regional Laboratory on the campus of Dalhousie University in Halifax since June 1952.

Under the terms of the Research Council Act, the Council has charge of all matters affecting scientific and industrial research in Canada that may be assigned to it by the Committee of the Privy Council on Scientific and Industrial Research. In discharging these responsibilities, the Council may undertake, assist or promote research. Its duties include the utilization of Canada's natural resources; the improvement of industrial processes and methods; the discovery of processes and methods likely to expand existing industries or to develop new ones; the utilization of industrial wastes; investigation and determination of physical standards, methods of measurement, and fundamental properties of matter; the standardization and certification of scientific and technical apparatus used by government and industry; the determination of standards of quality for materials used in public works and government supplies; and investigation and standardization, at the request of industry, of industrial materials or products. As a service to Canadian science, the Council maintains scientific liaison offices in Ottawa, London, Washington and Paris. The liaison officers abroad also serve as scientific attachés in the Canadian diplomatic missions. The National Research Council Library, with holdings of more than 600,000 volumes in science and technology (including 12,000 journals and other serials), acts as the National Science Library of Canada (see also p. 377).

The Council's laboratories are organized in ten divisions and two regional laboratories, each with its own director. Six divisions are engaged in applied and fundamental studies in the natural sciences-biosciences, applied and pure chemistry, applied and pure physics and radiation biology. Four others are devoted chiefly to engineering work-building research, mechanical engineering, radio and electrical engineering, and the National Aeronautical Establishment. The two regional laboratories carry out research related to the

[^127]resources of the Prairie and Atlantic regions. A Medical Research Council, responsible for the support of medical research but functioning under the general administration of the National Research Council, was established in November 1960 (see p. 288).

The National Research Council consists of the President, two Vice-Presidents (Scientific), one Vice-President (Administration) and 17 other members, each of the latter group being appointed for a term of three years and chosen to represent industry, labour, and research in science and engineering. Many of the members are drawn from Canadian universities. The Council reports to the Committee of the Privy Council on Scientific and Industrial Research through a Minister desiguated by the Governor in Council for the purposes of the National Research Council Act.

The Council's 1966-67 budget, excluding the provision for the activities of the Medical Research Council, is about $\$ 74,000,000$, approximately $\$ 29,000,000$ of which is required for foundation work-scholarships and research grants in science and engineering. The remainder is used to operate the laboratories and to provide for the Council's industrial research assistance program. Of the Council's 2,760 employees, 788 are scientists and engineers.

Links with Industry.-The application of science to Canadian industry has always been one of the major concerns of the National Research Council. Since 1917, representatives of industry, government and the universities have co-operated, through NRC Associate Committees, in solving pressing industrial and economic problems. There is a constant flow of personnel and information between NRC laboratories and those of industry, and roughly 70 p.e. of the Council's own effort involves applied research intended for industrial use. Contract research on specific projects and a wide variety of testing and standardization work are undertaken. Inventions from NRC laboratories are carried through the patent stage, then made available for manufacture through Canadian Patents and Development Limited (see p. 146).

A most important activity of the Council is its Technical Information Service, which consists of field engineers who visit manufacturing establishments, and a staff of trained researchers in Ottawa who use the technical literature available through the Council's Library. Although all inquiries are handled, the Service is particularly interested in helping small firms with no research or information facilities. Free advice is given on all aspects of materials and processing, equipment, plant design and packaging and on such topics as wage incentives and inventory control.

Direct financial assistance for research performed by Canadian industry was begun by the Council during 1962. Under this arrangement the Council makes grants supporting long-term applied research and development work proposed and carried out by industry. Aid is given on a shared-cost basis, with industry supplying at least half the funds for any one project. Companies of all sizes, representing a wide range of industrial activity, are eligible for assistance and the companies retain all rights arising from the work. In 196566 , at a cost of $\$ 3,300,000$, the Council supported 40 new research projects and 104 continuing projects in 90 Canadian firms. This work gave rise, also, to nearly 700 new research positions.

Biosciences.-The program of the Division of Biosciences covers practical problems related to the national economy and fundamental studies that may contribute useful information in such areas as agriculture, medicine and certain industries. Apparatus and techniques for preparing, preserving and storing food make up a large part of the applied work and particular attention has been given recently to food freezing, cold storage in jacketed rooms and refrigerated transport. Study and testing have continued on a process now widely used in industry for the immersion freezing of poultry, quality loss in poultry meat during freezing and refrigerated storage, and an improved cooling system for frozen food trucks. The physical and chemical reactions influencing coagulation in
evaporated milk during sterilization are being investigated. Microorganisms related to food are studied, particularly those that grow in cheese, in high salt concentrations and at low temperatures. A national culture collection of about 3,000 yeasts, bacteria and fungi is maintained.

Considerable effort is devoted to questions of animal and plant physiology. Studies of the mechanisms by which mammals, birds and man adapt to cold have provided important basic information on cell, muscle and metabolic activity, and help to explain practical problems such as the high death rate of newly born caribou. Fundamental plant processes such as translocation are investigated, and a study is being carried out on strains of blue-green algae believed responsible for cattle deaths. Plant fibres such as cellulosethe skeletal material of plants-and the structure and function of plant cell components are also examined.

Other studies involve fermentation mechanisms and enzymology, and the structures of proteins, polysaccharides and lipids. One group, among its other projects, is engaged in long-term statistical studies of protein variability in wheat, a factor that influences overseas wheat sales. The work has been expanded recently to include the effects of weather factors on protein content.

Radiation Biology.-The effect of radiation on living things, including people, is the subject of research in the recently organized Division of Radiation Biology. The Division will eventually be housed in a new building being erected in close proximity to the buildings housing the major applied Divisions of the Council. A variety of types of radiation will be used, including ultra-violet light, gamma rays, X-rays, electrons and fast neutrons. The physical, chemical, functional and statistical changes brought about by irradiation of pure chemicals, biochemicals (enzymes and macromolecules), cells, tissues, microorganisms, plants, animals and human or animal populations will be investigated. Studies will also be made of radiations arising within biological materials as well as those originating outside. Where possible, observations will be made of the effects of radiations delivered at widely differing dose rates.

Applied Chemistry.-The Division of Applied Chemistry is concerned with supplying new scientific information for the development of Canada's natural resources and chemical industries. Although formerly much of the work involved the solving of immediate specific problems, a larger part of the Division's effort is now being devoted to more basic studies. This avoids conflict with industrial laboratories and consultants and, in addition to providing fundamental information, often produces practical results. For instance, a longterm investigation on the contacting of fluids and solids-an operation vital to many chemical engineering procedures-has resulted in a successful commercial operation for drying grain. The same method can be extended easily to chemical reactions and to removing liquids from other materials.

Another long-term project of considerable industrial potential has concerned the factors responsible for the stability, or the destruction, of suspensions of solids in liquids and a method was devised for easily separating almost any suspended solid from the liguid surrounding it. This work has been expanded to include the separation of dissolved solids. It has been shown that virtually all dissolved salts can be removed from water by filtration through an appropriate medium, and tests with other materials are in progress. Then, too, the study of chemical reactions at very high temperatures-carried on over the past several years-bas resulted in the successful preparation of a stable polymer that could not be produced by conventional means.

The eleven sections of the Division are: analytical chemistry, chemical engineering, colloid chemistry, high polymer chemistry, high pressure, kinetics and catalysis, metallic corrosion and oxidation, metallurgical chemistry, physical organic chemistry, hydrocarbon chemistry and textile chemistry. Much of the work falls under the general headings of petroleum or corrosion chemistry, in that several sections work on topics related to one of these fields.

Pure Chemistry.-The Division of Pure Chemistry has a small permanent staff which works in collaboration with about 50 young postdoctorate fellows from all over the world. The work consists of long-term fundamental investigations in physical and organic chemistry designed to provide new basic knowledge in chemistry.

The work in organic chemistry includes investigation of the structures of alkaloids, studies of the infrared spectra of steroids, and the synthesis of porphyrins and of compounds labelled with isotopes. Other sections deal with chemical kinetics and photochemistry, the study of the ionization potentials of free radicals by mass spectrometry, Raman and infrared vibrational spectroscopy, organic crystal semi-conductors, and the application of high resolution proton magnetic resonance techniques to the study of hydrogen bonding and other molecular interactions. Still others investigate the thermal properties of simple solids and imperfections in the bulk and the surface of alkali halide crystals, the heats of micellization by microcalorimetry, and the thermodynamics and stress-strain relationships associated with the absorption of fluids by active carbons. There is also a section interested in the chemistry of fats and oils.

Applied Physics.-The work in applied physies is divided between research in fields of physics deemed most likely to contribute in a practical way to the Canadian economy and research to improve the accuracy and precision of fundamental physical standards on which all measurements are based. All the fundamental physical standards for Canada are the responsibility of the Applied Physics Division, which has primary standards equal to any in the world in the fields of mass, length, time, electricity, temperature, photometry and radiation. The sections of the Division are: acoustics, diffraction optics, electricity, heat and solid state physics, instrumental optics, interferometry, mechanics, photogrammetric research, radiation optics, and X-rays and nuclear radiations.

Examples of specific projects under way include a study of physiological noise and its relationship with the threshold of hearing, resulting in the development of a new probe microphone which should find wide application in sound measurement; new precision and accuracy is envisaged for audiometers of great importance in connection with hearing loss in industry and elsewhere; researches directed toward improving the resolving power of optical systems, the design of a hydrogen maser offering potential as a frequency standard for defining time, measurements on various metals and ceramics aimed at elucidating the mechanism of heat transfer at high temperatures, the establishment of an international standard neutron source, and investigation and application of the very intense and very monochromatic radiation emitted by gas lasers. Several of the Division's developments are being produced commercially; among these are noise-excluding ear defenders, a revolutionary analytical plotter for making maps from aerial photographs (available in two models -one for military and the other for civilian use), six- and five-figure potentiometers, a precision direct reading thermometer bridge, an instrument for measurement of resistance to a precision of one part per million, and a new instrument for measuring more accurately and quickly electrical voltages of up to 3,000 volts.

Pure Physics.-Investigations are under way on cosmic rays and high-energy particle physics, solid state physics, plasma physics, spectroscopy, and X-ray diffraction. The work is on fundamental problems which do not have immediate application but advance the froatiers of knowledge and supply the basis for further progress in the applied fields. Important advances in the study of cosmic rays and energetic particles are being made by means of a specially designed instrument package operating aboard the Canadian earth satellite Alouette II. The package is sending back vital new information about the Van Allen radiation belts and about the artificial belts created by atomic explosions.

The solid state group studies the electrical, thermal and mechanical properties of metals and semi-conductors especially at very low temperatures. The plasma physics group, established in 1962, has already made an important contribution by observing the scattering of a ruby-maser beam by a plasma. This study leads to a determination of
electron temperature and electron concentration. In the spectroscopy group, the structures of atoms and molecules are investigated by means of their microwave, visible and ultraviolet spectra, and considerable work has been done on optical masers.

The X-ray diffraction laboratory undertakes fundamental work in molecular and crystal structure and identification problems for government laboratories. Two of the major projects concern narcotics and vanadium minerals. X-ray diffraction methods are extremely valuable for identification purposes as they are non-destructive and require only very small amounts of material.

Building Research.-The provision of a comprehensive research service for the construction industry of Canada is the primary concern of this Division. The research program therefore covers all aspects of building design, building materials and components, fire research and studies in soil, snow and ice mechanics. Regional stations engaged in research and information are maintained in Halifax, Saskatoon, Vancouver and Norman Wells. The Division serves as the technical research wing of the Central Mortgage and Housing Corporation.

Examples of Division projects are the behaviour of concrete aggregates and lightweight concretes; the materials and techniques of masonry construction and plastering; atmospheric corrosion of metals; paint and acoustics research; and examination of the performance of walls, windows, chimneys and domestic heating systems. Other studies involve humidity in buildings, air-conditioning design data, snow and wind loads on structures, the properties of various soil types including permafrost and muskeg, and the effects on buildings of ground vibrations caused by earthquakes. A unique fire research laboratory provides facilities for all types of fire resistance, fire prevention and fire fighting tests.

As the Division concentrates on building problems peculiar to Canada, much of the work concerns the performance of buildings and building materials in cold weather. In this connection, double-glazed windows and lightweight metal and glass curtain walls, used increasingly in modern buildings, have been examined. Special studies have been made to improve winter building techniques and there is a section devoted to problems of building in the Far North.

The efforts of the Division have included educational work in a number of directions in order to alert the design professions and manufacturers to design-features that should be avoided. Similar liaison exists with federal and provincial public works departments and some important field studies have been made of some new provincial buildings.

Many results of the Division's research are expressed in the National Building Code, an advisory document of building standards now used by municipalities accounting for about three quarters of the total urban population of Canada. The Division also provides the secretariat and considerable technical assistance to the Associate Committee that produces the Code on behalf of the Council.

Mechanical Engineering.-This Division works mainly in the fields of mechanics, hydrodynamics (hydraulic engineering and naval architecture) and thermodynamics. Extensive testing and specification work is undertaken for a variety of industries and for government departments. Much of the work consists of continuing projects related to land, sea and air transportation.

The mechanies activities include mathematical analysis and computation, the development of instruments and servomechanisms, and research on mechanical devices such as gears. One group, working in the field of bio-medical engineering in collaboration with surgeons, has devised a mechanical aid for the treatment of patients with curvature of the spine; a blood cooler used experimentally with animals promises to extend for an hour or more the length of time a surgeon can conduct a brain operation without blood flow through the brain.

In hydraulics, a number of investigations and models have been made for improving Canadian harbours. The successful development of the Jarlan perforated breakwater and
its highly successful use at Baie Comeau have set in motion investigations as to its applicability to other harbours in Canada and this interest is being augmented by inquiries concerning the breakwater from all over the world. Also, a promising scheme has been developed for reducing silt accumulation in harbours by wave energy. The ship laboratory has continued its studies on propeller, rudder and hull design and performance.

Railway work is devoted mainly to locomotives and the riding qualities and mechanical behaviour of freight cars. Improved braking systems and cheaper fuels have been investigated and a study of the dynamics of long trains and of means of reducing damage has been initiated by Canadian railways in co-operation with NRC. A long-term study is being made of the possible use of gas turbines in locomotives.

The application of gas turbines to aireraft taking off and landing vertically is being explored, together with the thermodynamic, aerodynamic and control problems that this type of aircraft involves. Considerable research is being done on the behaviour of lubricants at high pressures and that of gases at extremely high temperatures.

National Aeronautical Establishment.-The National Aeronautical Establishment conducts aeronautical research to meet the needs of military and civil aviation, working in co-operation with the Canadian aircraft industry; it also carries out its own research program. Its studies therefore centre around problems of aerodynamics, aircraft structures and materials, and flight mechanics. It has the only development wind tumel facilities in Canada and is thus equipped to handle most of the industrial or military aircraft developments of the forseeable future. Aerodynamics research from low speeds up to about 43 times the speed of sound is carried out in the wind tunnels; considerable attention is being given at present to low-speed problems of vertical and short take-off aircraft. Other studies include work on the aerodynamic characteristics of high-thrust propellers, on wings with submerged fans and on wings immersed in powerful slip-streams. The research on atructures and materials involves investigation of aircraft accidents, the theory of structures, fatigue and fracture, flight loads statistics and aircraft hydraulics. The flight mechanics program covers research on flight safety and flying stability and control, the development of a crash position indicator for locating crashed aircraft, atmospheric physics, antisubmarine magnetometry, and the avoidance of aircraft collisions.

A growing and highly diversified program of assistance to smaller industries is developing, the work relating mainly to product development, product improvement or testing. Concerning aircraft utilization, efforts have been directed toward those areas of national activity where aerial methods might offer economies in cost or improvements in effectiveness, such as agricultural applications, forest fire fighting, serial logging, high sensitivity magnetic surveys, precipitation physics, and studies of atmospheric turbulence.

Radio and Electrical Engineering.-The work of this Division includes engineering problems of interest to Canadian industry and fundamental research in electrical science. The Division co-operates with the Armed Services and associated industries in designing, producing and evaluating new equipment.

The engineering program includes studies of corona loss and radio interference from extra-high-voltage direct-current transmission lines, rocket telemetry, antenna development, electromedical instrumentation, electronic aids to navigation, and high-frequency standards. The Division maintains the best-equipped antenna laboratory in Canada and provides considerable assistance to Canadian industry in the development and manufacture of new antennas and radomes. Examples of recent developments by the Division are a compact transistorized marine radar for use by pleasure craft and fishing vessels, an underwater crash position indicator for locating submerged aircraft, an area display electrocardiograph showing the time variation of heart voltage between 70 points on the body, and a creative tape recorder much in demand by electronic music studios. A highly mobile counter-mortar radar designed by the Division went into commercial production in 1961.

Fundamental studies are carried out in the fields of radio astronomy, upper atmosphere research, electron physics, and solid state physics. At the Division's radio observatory in Algonquin Park, Ont., a radiotelescope having a parabolic reflector 150 feet in diameter went into operation in mid-1966.

Space Research Facilities.-In 1966, the National Research Council took over from the U.S. Air Force's Office of Aerospace Research the Churchill Research Range at Fort Churchill, Man., and placed it under its newly formed Space Research Facilities Branch. The Range, which is being operated for the joint benefit of Canadian and American scientists under joint Canadian-American funding, is capable of launching many kinds of sounding rockets and balloons carrying scientific experiments to investigate the earth's upper atmosphere. Associated ground-based instruments are specially designed to study the aurora borealis by photographic and spectrophotometric methods.

The Space Research Facilities Branch has also taken over the work previously carried out in the Radio and Electrical Engineering Division to convert scientific experiments into hardware suitable for rocket payloads. This engineering work on behalf of scientists in the National Research Council and in Canadian universities will be done primarily by industrial contracts and includes selection and procurement of suitable rockets. The Branch also operates a Minitrack satellite-tracking and data-reception station near St. John's in Newfoundland; this activity is carried out on behalf of the National Research Council of Canada and the National Aeronautics and Space Administration of the United States.

Atlantic Regional Laboratory.-The Atlantic Regional Laboratory is engaged in practical and fundamental studies related to the resources and industries of the Atlantic Provinces. The Laboratory offers advice and assistance to local industries and government departments and, in addition, houses the Atlantic Regional Station of NRC's Division of Building Research. The research program includes investigations of the biochemistry and physiology of fungi, bacteria, marine algae, lichens, mosses and higher plants; of the chemistry of naturally occurring organic compounds; of the physical chemistry of inorganic reactions at bigh temperatures. Studies are under way on the application of scientific agriculture to the cultivation of seaweed and surveys promise to reveal new sources of supply to meet the future demands of this expanding industry. Extracts obtained from species such as Irish Moss, kelp and rockweed find more than 40 different uses in the food, pharmaceutical and textile industries and in agriculture.

A development of considerable significance was the establishment of a close working relationship with Dalhousie University at Halifax. Under the new arrangement, students acceptable to the University's Faculty of Graduate Studies may carry out research in the Atlantic Regional Laboratory, directed by Laboratory staff members holding unpaid appointments in the Faculty. The immediate aim of the scheme is to expand the facilities for graduate studies in the Atlantic region; the long-term objective is to help create a strong scientific background conducive to large-scale development by industry.

Prairie Regional Laboratory.-One of the aims of the Prairie Regional Laboratory is to develop wider uses for crops grown on the prairies by determining potential uses of crops now in production and by encouraging the production of new crops to meet specific needs. The Laboratory program is carried out by five sections: the physiology and biochemistry of fungi section, physiology and biochemistry of bacteria, plant biochemistry, chemistry of natural products, and the engineering and process development section. Research is therefore carried out on the properties and reactions of plant components, and on the biological, chemical and engineering processes for turning them into other compounds. The development of oil-seed crops as alternatives to seed crops has received considerable attention.

For some time, the Laboratory has studied major plant constituents such as carbohydrates, protein, starch, lignin and fibres. An example of this work is the definition of the chemical structure of several polysaccharides found in cereal grains and important in baking, milling and fermentation technology. Attention is also being given to minor plant constituents, such as phenols, flavonoids and terpenes, which are known to have fungicidal and germicidal properties. A laboratory has been set up for the systematic study of extractives from local plants and shrubs.

Developments from the Laboratory attracting commercial interest are: the production of feed supplements by direct use of mieroorganisms, and specific essential amino acids such as lysine; poly-hydroxy alcohols such as glycerol and arabitol; hydroxy fatty acids; and the possibilities of producing specific glyceride types using the enzyme systems of microorganisms. The Laboratory works in co-operation with the Canada Department of Agriculture to help maintain Canada's position as the world's leading exporter of rapeseed, used to produce cooking oils, dressings and oil for use in margarine and shortening. A group working in the field of mycology is concerned with the production of new chemicals, antibiotics, alkaloids and amino acids.

## Section 2.-Research in the Atomic Energy Field*

Recent Developments and Prospects.-The first major fruits of Canadian atomic energy research now appear close at hand. The Hydro-Electric Power Commission of Ontario is constructing a multi-unit nuclear electric generating station at Pickering near Toronto. Each unit will generate 500 megawatts ( 1 megawatt $=1,000$ kilowatts) and beginning in 1970 it is planned to bring into operation the first four units at yearly intervals. Estimates indicate that the power will be generated for less than four mills ( 0.4 cents) per kilowatt hour and will be competitive with that from other available types of thermal generating station. The Quebec Hydro-Electric Commission is also entering the nuclear field with a 250 -megawatt prototype nuclear generating station of advanced design. Like the earlier CANDU (Canadian Deuterium Uranium) reactors. the design employs natural uranium as the fuel and heavy water as the moderator but the heat will be carried from the fuel by boiling ordinary water instead of by heavy water at a pressure sufficient to prevent boiling. The design is distinguished by the title CANDU-BLW-250 (Canadian Deuterium Uranium-Boiling Light Water-250 megawatts).

The first nuclear power demonstration (NPD) reactor, CANDU-PHW-20 (Pressurized Heavy Water-20 megawatts), at Rolphton, Ont., has shown clearly that capacity factors in excess of 80 p.c. throughout a full year can be achieved with this type of system. Fuel is routinely changed with the reactor at power and losses of heavy water are well within the economic limits. This reactor is now yielding useful information on the long-term behaviour of its components and is providing a training base for those who will ataff the larger reactors now being built in Canada and abroad. The next reactor in the series is the 200 -megawatt station at Douglas Point, Ont., which will be brought into operation in 1966.

Canadian heavy-water power reactors are also under construction in India and Pakistan. To meet the large demand for heavy water that these reactors necessarily entail, one plant to produce 200 tons a year is nearing completion at Glace Bay, N.S., and a site is being chosen for another that will produce 500 tons a year.

Although nuclear power is expected to restore the world market for uranium, the major build-up is expected in the 1970 s . The high energy yield from the fission of uranium is the key to economic nuclear power. The yield is so high that the cost of the raw uranium is a very minor component of the cost of electric power. It is about 5 p.c. of the total and may be contrasted with 50 p.c. or more paid for coal in some large conventional generating stations. The largest component in the over-all economy of nuclear power systems is reactor plant construction and a minor ( 10 p.c. to 15 p.c.) component is fuel fabrication.

[^128]In the past, the major atomic energy activity in Canada was uranium mining and refining for export in support of military uses. Circumstances have changed so greatly that the Government has announced a policy of no further exports for nuclear weapons but is encouraging export for peaceful purposes such as nuclear power subject to negotiated safeguards. It is also significant that since lower unit power costs result from larger stations, there is a new incentive for large utilities to export power from their systems and to interconnect centres of load by high voltage transmission even over long distances. Also, all users of electricity benefit from the new trend to lower rates through greater demand. The Canadian designs of nuclear power reactor appear capable of adapting to the largest capacities desired and of taking advantage of changes in the market value of natural uranium and of reprocessed fuel to reach even lower power costs as the scale of operations increases.

The first commercial food irradiator using cobalt-60 radiation has been put into service near Montreal, Que.

A major advance in instrumentation, precision gamma-ray spectrometry based on specially prepared germanium crystals pioneered at Chalk River, is revolutionizing many techniques, particularly isotope and element analyses by radioactivation by neutrons.

Organizational Arrangements.-Three Federal Government organizations have the basic responsibilities for atomic energy in Canada: (1) the Atomic Energy Control Board, responsible for all regulatory matters concerning work in the nuclear field; (2) Eldorado Mining and Refining Limited, with a double function as a producer of uranium and as the Government's agent for the purchase of uranium from private mining companies; and (3) Atomic Energy of Canada Limited, concerned with nuclear research and development, the design and construction of reactors for nuclear power, and the production of radioactive isotopes and associated equipment, such as cobalt- 60 Beam Therapy units for the treatment of cancer, and large installations for the sterilization of medical supplies and other uses.

The Atomic Energy Control Board does not itself conduct research but it gives substantial grants to universities to further fndependent studies and to provide the equipment without which the universities would find it difficult to train the nuclear research workers of tomorrow. The National Researeh Council also has made grants in the atomic energy field; in 1965-66 they totalled $\$ 1,600,000$.

Eldorado operates research and development laboratories in Ottawa and uses them to support its uranium mining and processing at Beaverlodge in northern Saskatchewan and its refining plant at Port Hope, Ont. Eldorado co-operates with the Department of Energy, Mines and Resources, which carries out background research on the production and use of uranium.

Atomic Energy of Canada Limited (AECL) has an eleven-man Board of Directors, including individuals from power companies, private industry and the universities. The company's major plant, the Chalk River Nuclear Laboratories, is near Chalk River, Ont., and a second plant, the Whiteshell Nuclear Research Establishment, is near Pinawa in Manitoba. The company's Head Office and AECL Commercial Products are in Ottawa AECL Power Projects and Prototype Design Engineering Division in Toronto direct the engineering of power reactors and nuclear generating stations and operate as consulting nuclear engineers. The design and construction of NPD, the demonstration plant, was carried out by collaboration between AECL, the Canadian General Electric Company Limited and Ontario Hydro. AECL Power Projects, with the assistance of Ontario Hydro, designed and constructed the Douglas Point station, which plant, by agreement, will be purchased by Ontario Hydro when it is in satistactory operation. A similar arrangement between AECL and Hydro Quebec is expected to be used for the construction of the CANDU-BLW-250 station. The large units of the Pickering station are being built by Ontario Hydro using AECL Power Projects as consulting nuclear engineers. An Advisory Committee on Atomic Power Development keeps all other utilities fully informed of the
progress being made. This Committee, which was set up by the Federal Government in 195t, meets periodically to assess the economic prospects of nuclear power throughout the country.

Because of the great pace of technological development in nuclear power throughout the world, AECL devotes a major effort to collaboration with many organizations. These include industrial firms and the scientific and engineering departments of universities in Canada and, through foreign government agencies and several international organizations, many technical groups in other countries. For example, the Canadian General Electric Company has designed and constructed WR-1, an organic-cooled experimental reactor, for the Whiteshell Nuclear Research Establishment on a fixed price negotiated contract. The Canadian General Electric and Canadian Westinghouse companies are AECL's chief contractors for fuel element fabrication, and other work related to Capada's nuclear power program is carried out in collaboration with Shawinigan Engineering, Hawker Siddeley Canada Limited, Dilworth, Secord, Meagher and Associates, Montreal Engineering Company Limited and others. In general, AECL's policy is to stimulate the interest of private industry in the development of nuclear power so that these firms can take over construction of power plants when the time arrives, leaving AECL free for fundamental studies and developing new reactor concepts. For some years AECL expects to continue a consulting engineering role in the design of nuclear generating stations. AECL also lends general support to the nuclear and related studies of Canadian universities and lets contracts to the universities on specific problems.

To support their activities in this field, both industry and universities need ready access to information. This was one reason why industry set up the Canadian Nuclear Association, a body that has held a highly successful series of annual conferences at which both progress and the prospecta for the future are reviewed. A commercially published magazine, Canadian Nuclear Technology, maintains the flow of general information and opinion. Detailed technical information is available principally from the library of the Chalk River Nuclear Laboratories, which lends about 500 items a month from its comprehensive collection of the world's nuclear literature. Information is also distributed from extensive depository collections at the libraries of the University of British Columbia, McMaster University and the National Research Council and from seven smaller collections located across Canada.

In the international field, close ties are kept with the United States Atomic Energy Commission (USAEC) and the United Kingdom Atomic Energy Authority, both of which bave representatives permanently at Chalk River. There is an agreement with the United States for co-operative work on heavy-water-moderated reactors; it provides for the free exchange of all technical data in this field and a commitment by the United States to undertake research and development related to reactors of Canadian design. Collaboration has also been established with the International Atomic Energy Agency, the Organization for Economic Co-operation and Development, and Euratom, as well as with Australia, West Germany, India, Italy, Japan, Pakistan, Spain, Sweden, Switzerland, U.S.S.R. and, less formally, with Denmark, France and Norway. In India, a major experimental reactorthe Canada-India Reactor-similar to NRX at Chalk River was constructed and was formally inaugurated in January 1961.

A 200-megawatt plant similar to that at Douglas Point is being constructed in India on a co-operative basis, known as the Rajasthan Atomic Power Project (RAPP). India has announced plans to install a second similar unit on the same site and two more units on another site near Madras. Pakistan has entered into an agreement to purchase from the Canadian General Electric Company a 137-megawatt station for the Karachi area.

Research and Research Facilities.-At the Chalk River Nuclear Laboratories, basic and applied research is carried on by about 200 professional scientists and engineers supported by 300 technicians devoted to research in nuclear physics, nuclear chemistry, radiobiology, reactor physics, radiation chemistry, environmental radioactivity, physics
of solids and liquids, and other subjects, using as their primary facilities the two major reactors, NRX and NRU, the auxiliary reactors, ZEEP, PTR and ZED-2, the tandem Van de Graaff accelerator and analytical facilities such as a precision beta-ray spectrometer, mass spectrometers, electron microscopes, multi-channel pulse analysers, automatic recorders, and analogue and digital electronic computers.

Basic research is carried on in many fields, especially that of the structure of atomic nuclei and of the interactions of neutrons, not only with individual nuclei but also with liquids and crystalline solids, particularly those involving energy transfer. For nuclear structure studies, the tandem Van de Graaff has made pioneer work possible by providing multiply charged ions of precisely known energy and direction. It has proved possible to produce nuclei in specific energy states by different routes and to identify and analyse the states, thereby deducing the spin and other characteristics and discovering, for example, three correlated series of rotational states in the nucleus neon-20. Not only is this important to a basic understanding of nuclear structure but it also finds application in unravelling the complex of nuclear reactions responsible for the genesis of nuclei in the interior of stars.

Studies of neutron interactions with matter are made possible by the intense beams of neutrons available from the NRU reactor. By monitoring the neutrons in cosmic radiation, it has been possible to find correlations with the occurrence of solar flares and contribute to the recent advances of knowledge of phenomena in interplanetary space. Isotope techniques have brought about revisions in the basic theory of chemical reactions induced by radiation. This basic research may find a useful application in the technology of using an organic liquid as coolant in nuclear power reactors.

The research facilities of the NRX and NRU reactors have continued to attract individual scientists as well as teams from universities and from other countries. The international study on the scattering and slowing of neutrons by moderators and other materials of interest at high and low temperatures was recently drawn successfully to a close. More facilities for studying radiation damage under closely controlled conditions are coming into use. These include devices for measuring creep of metals under stress and fast neutron bombardment at controlled temperatures.

The first major installation at the Whiteshell Nuclear Research Establishment (WNRE) is the organic liquid-cooled, heavy-water-moderated experimental reactor WR-1, commissioned in 1965. Under a special agreement the facilities of this reactor are now shared with the USAEC and their contractors. The facilities are specially suited for development work toward large reactors of a similar type that have been selected by the USAEC as promising for their water desalination program. The facilities of WR-1 are quite extensive and can be applied to development work also with other coolants such as boiling water and superheated steam. Laboratory facilities at WNRE are specially suited to studies of the effects of radiation and a wide program from molecular biology to radiation chemistry and reactor engineering is envisaged. A new tandem Van de Graaff rated at $10,000,000$ volts on the terminal has replaced the former machine at Chalk River that attained $7,000,000$ volts. The growing use of lithium-drifted germanium detectors for precise measurements of gamma-ray energies has led also to more extensive electronic digital data-processing.

Nuclear Power Development.-Much of the success of the CANDU series of reactors is attributable to the engineered design of the fuel tested in many experimental irradiations under conditions that are more exacting than normal service. The fuel is uranium dioxide specially prepared from natural uranium entirely in Canada. Strings of pellets of sintered oxide are charged into thin-walled zirconium alloy tubes. The tubes deform slightly in service in a determined manner that has proved satisfactory. The migration of the fission product atoms, especially the gases, has been extensively studied and satisfactory operating conditions established for the full energy yield of 9,000 megawattdays per ton of uranium and more. This energy yield is so great that there is no need to make provision for processing the spent fuel and the prospective fuelling cost is less than
one mill ( 0.1 cent) per kilowatt hour of electricity. This cost may be compared with about three mills from coal at $\$ 8$ per ton. The low fuelling cost is most important because Canada has access to such an abundance of coal, oil and natural gas that the competitive cost level for thermal power is lower than in many other countries.

The low fuelling cost derives as much from the details of the design proposed as from the general type of reactor chosen. Some of the important features seem worthy of mention. At Douglas Point the first full-scale plant will generate 220 megawatts with a steam-cycle efficiency of 33.3 p.c., so that the reactor has to supply 660 thermal megawatts to the steam-raising plant. The reactor is essentially a tank of heavy water, 20 feet in diameter and 16.5 feet long, lying horizontally. It is penetrated by 306 fuel channels parallel to the axis on a nine-inch-square lattice. Each channel is a zirconium-alloy pressure tube of 3.25 in . inside diameter and about 0.16 in . thick. The fuel consists of bundles of 19 rods, 0.6 in . in diameter and 19.5 io . long, made of dense uranium dioxide in thin zirconiumalloy tubes. Heat is taken from the fuel directly by heavy water that passes at $560^{\circ} \mathrm{F}$ to the steam boiler, where normal water is raised to saturated steam at $483^{\circ} \mathrm{F}$ and 38 atmospheres. These details show that the design represents a considerable advance over that originally conceived in 1956, and the improvement bears promise that continued progress will lead to costs well below the economic target. As examples of the advance, it may be noted that, for the same electric power output, the total heat production of the reactor has been brought down from 790 to 700 megawatts, the efficiency of the steam cycle itself has risen from 27.9 p.e. to 33.3 p.c., and the length of fuel rod has been reduced from 86 to 30 kilometers. The prospective fuelling cost has dropped from $1.85 \mathrm{mill} / \mathrm{kwh}$. to $1.0 \mathrm{mill} / \mathrm{kwh}$. On the other hand, no over-all reduction has been achieved in the capital cost estimates which remain in the range of $\$ 300$ to $\$ 400$ per electrical kilowatt for the whole plant. However, a reduction is expected now that manufacturing experience has been gained which can be used in future construction. Even greater reductions in unit power cost will result at Pickering from the increase in the capacity of the reactor to 500 megawatts of electricity and the incorporation of several such units in a large generating station.

An evaluation was presented at the third United Nations Conference on the Peaceful Uses of Atomic Energy at Geneva in September 1964 of cost estimates of several preliminary designs of large power reactors using heavy water as moderator. These designs represented types for which development work was well advanced. The differences lie in the choice of heat transier fluid or 'coolant' and the steam cycle. Basically there are three coolants-heavy water, ordinary or light water, and an organic liquid. The heavy water could be under pressure to prevent boiling or to allow some boiling. Light water would have to boil or be in the form of 'fog' or 'wet steam' The organic liquid must not boil. All types have excellent economic promise and it was decided to develop the boiling light water type chiefly for two reasons. By taking the steam direct to the turbine a boiler or heat-exchanger is eliminated and the efficiency is raised. The second advantage is a relaxation of the strictness of control of leaks needed with hot heavy water, both because of its cost and because of the toxicity of the tritium it contains. Some development of the organic liquid system continues under a new agreement with the United States in support of its program to develop such a system for water desalination as well as for power.

Most of this development work centres on establishing the properties of materials for the arduous environment of bigh temperatures, and radiation effects affecting the solids and the fluids. In ordinary engineering, the three parameters of stress, temperature and time lead to complex analyses, especially when corrosion and atomic diffusion are active. In reactors, irradiation is a fourth and major parameter. Thus, materials development still calls for a major scientific and engineering program of studies.

CANADIAN NUCLEAR REACTORS IN OPERATION, UNDER CONBTRUCTION OR UNDER DETAILED DESIGN

| Name | Location | $\begin{gathered} \text { Date } \\ \text { of } \\ \text { Start-up } \end{gathered}$ | Power | Fuel | Moderator | Coolant | Use |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Zero Energy Experimental Pile (ZEEP)...... | Chalk River, Ont. | 1945 | 100 w. | Natural uranium metal or oride | Heavy water | - | Lattice experiments |
| National Research Experimental (NRX) ${ }^{\text {a }}$... | Chalk River, Ont. | 1947 | $42,000 \mathrm{kw}$. | Natural uranium oxide and enriched uranium alloy | Heavy water | Ordinary water | Research, engineering teats and isotope production |
| National Research Universal (NRU)........ | Chalk River. Ont. | 1957 | $\begin{gathered} 90,000 \mathrm{kw} . \\ \text { to } 120,000 \mathrm{kw} . \end{gathered}$ | Enriched uranium alloy | $\begin{aligned} & \text { Heavy } \\ & \text { Water } \end{aligned}$ | Heavy water | Research, engineering tests and isotope production |
| Pool Test Reactor (PTR)........ | Chalk River, Ont. | 1957 | 100 w . | Enriched uranium alloy | Ordinary water | Ordinary water | Reactivity and absorption measurements |
| Toronto Univeraity Sub-critical Reactor...... | Toronto, Ont. | 1958 | ー | Natural uranjum metal | Heavy water | - | Research and teaching |
| McMaster Nuclear Reactor (MNR).......... | Hamilton, Ont. | 1958 | $2,000 \mathrm{kw}$. | Enriched uranium metal | Ordinary water | Ordinary water | Research |
| ZED-2. | Cbalk River, Ont. | 1960 | 100 w . | Natural uranium metal oxide or carbide | Heavy water | - | Lattice experiments |
| Nuclear Power Demonstration (NPD).. | Rolphton, Ont. | 1962 | $\begin{aligned} & 20,000 \mathrm{kw} . \\ & \text { (electricity) } \end{aligned}$ | Natural uraniuma oxide | Heavy water | Heavy water | Power demonstration |
| Whiteshell Reactor No. 1 (WR-1), | Pinawa, Man. | 1965 | $\begin{aligned} & 40,000 \mathrm{kw} . \\ & \text { at firse } \end{aligned}$ | Enriched uranium oxide | $\begin{aligned} & \text { Heary } \\ & \text { water } \end{aligned}$ | Organic 1iquid | Research and engineering tests |
| CANDU-PHW-2002,2...................... | Douglas Point, Ont. | 1966 | $200,000 \mathrm{kw}$. (electricity) | Natural uranium oxide | Heavy water | Heavy water | Power |
| Karachi Nuclear Power Plant (KANUPP)... | Karachi, Pblistan | 1970 | $137,000 \mathrm{kw}$. (electricity) | Natural uranium oxide | Heavy water | Heavy water | Power |
| CANDU-PHW-500 (several reactors) ${ }^{2} \ldots \ldots \ldots$ | Pickering. Ont. | 1970 | $\begin{aligned} & 500,000 \mathrm{kw} \text {. } \\ & \text { (electricity) } \\ & \text { each } \end{aligned}$ | Natural uranium oxide | Heavy water | Heavy water | Power |
| CANDU-BLW-250.. | Pointe aux Roches, Que. | $\begin{gathered} 1971 \\ \text { proposed } \end{gathered}$ | $250,000 \mathrm{kw}$. (electricity) | Natural uranium oride | Heavy water | Ordinary water boiling | Power |

[^129]
## Section 3.-Space Research in Canada*

The interests of Canadian scientists engaged in space research continue to be mainly in the field of aeronomy with particular, though not exclusive, emphasis on the highlatitude atmospheric and magnetospheric phenomena which are now generally believed to be related to the various disturbances on the sum. Canada, with its large land mass extending on both sides of the auroral zone, is ideally located for studies of medium- and high-latitude atmospheric phenomena and Canadian scientists have long been active in this exciting field. While many of the older programs of ground-based observations are still of great importance and are being carried out, the new measurements from satellites and rockets are making a significant contribution to knowledge of solar-terrestrial relations and in the next fow years the importance of these studies using the new space techniques will increase.

The satellite program of the Defence Research Board, carried on in collaboration with the United States National Aeronautics and Space Administration (NASA), continues to form a major part of the Canadian space activities. The Canadian satellite 1962 Beta Alpha (Alouette), which was launched on Sept. 29, 1962, is still in orbit. Its instruments are functioning satisfactorily and there is every indication that it will continue to operate and send back scientific data for many months to come. The satellite carries a number of experiments but its main objective is the sounding of the ionosphere from above. The jonosphere is the diffuse layer of highly conducting gas lying between heights of about 60 to 300 miles. It reflects radio waves over a wide band of frequencies and is of great practical importance for communications. The underside of the ionosphere has been studied for many years by the technique of sending a short pulse of radio waves up from the ground and examining this pulse after it had been reflected back from the ionized regions. The satellite Alouette, however, was the first spacecraft to provide scientists with a continuous sounding of the ionosphere from above.

Other instruments carried by the satellite enable studies to be made of radio waves from outer space and very low frequency electromagnetic waves whose propagation is influenced by the earth's magnetic field. There are also a number of detectors to study cosmic rays, energetic particles in the Van Allen radiation belts and the artificial radiation introduced by high-altitude nuclear explosions. Data are transmitted from the satellite to the ground stations in several countries around the world and the magnetic tape records are sent to Ottawa for analysis. Scientific results to date have been most gratifying and the satellite measurements have added greatly to knowledge of the earth's upper atmosphere.

The over-all design and construction of the spacecraft were carried out by the Defence Research Telecommunications Establishment. Some components were made by Canadian industry and the cosmic ray instruments were the responsibility of the National Research Council. The cost of the launching vehicle, the actual launching and much of the data recovery were undertaken by the NASA as part of its international co-operative program. This joint Canadian-United States program is continuing. On Nov. 29, 1965 the second Canadian satellite Alouette $I I$ was successfully launched by NASA from the Western Test Range in California. This spacecraft carries instruments similar to but more sophisticated than Alouette I. Its elliptical near-polar orbit has an apogee of $3,000 \mathrm{~km}$., allowing measurements to be made over a much greater height range than previously. Alouette $\bar{I}$ is the first of four satellites to be built in Canada for the International Satellites for Ionospheric Studies (ISIS) series. These vehicles will be launched at about two-year intervals during the next five or six years.

The rocket-launching facility at Fort Churchill, Man., located almost under the belt of maximum auroral activity, has been very active; 17 Canadian rockets carrying scientific instruments have been launched since January 1964 as well as many United States rockets. The range has four launchers capable of handling the following rockets: Arcas, Nike, Cajun, Nike Apache, Astrobee, Aerobee, Argo D-4 (Javelin) and the Canadian Black Brant

[^130]series. On Jan. 1, 1966, the National Research Council assumed responsibility for the management of the Churchill Research Range. This arrangement was formalized by a Canadian-United States governmental agreement of June 14, 1965, which provided for joint funding and use of the range and designated the National Research Council and the National Aeronautics and Space Administration as the responsible Canadian and American agencies. Operations at the range are carried out by a civilian contractor.

Rockets have a special role in the space programs because there is an important region of the upper atmosphere that is too low for satellite orbits and too high to be reached by balloons or aireraft. This is the region between heights of about $\mathbf{2 5}$ and 200 miles. Here are found the absorbing layers in the lower ionosphere which cause radio blackouts and here are detected the complex atmospheric processes which produce the visible aurora. Because the axis of the earth's magnetic field is tilted, the auroral zone sweeps down across Canada and Churchill lies almost in the middle of this zone. This region of the atmosphere is therefore of great interest and importance to Canadian scientists. For many years investigations were limited to ground-based radio and optical measurements but now rockets are being used to carry instruments right into the aurora. These measurements, in situ, of electron density, temperature and charged particles will ultimately lead to a proper understanding of the aurora and high-latitude disturbances.

Many of the rockets fired at Churchill are of Canadian design and development. These are the Black Brant rockets which were pioneered by the Defence Research Board and are now produced commercially in Winnipeg. The first in the series, the Black Brant $I$, was an experimental vehicle and is now obsolete. Black Brant II is a 17 -inch diameter vehicle capable of carrying 150 lb . of payload to over 100 miles. Black Brant $I I I$ is a smaller rocket, 10 inches in diameter which will lift 40 lb . to about 100 miles. Black Brant $I V$ is a combination of $I I$ and $I I I$ and will go to a beight of about 600 miles. Black Brant $V$ is an optimum design of the $I I$. Most of the flights have been made with the $I I s$ but the $I I I \mathrm{~s}$ and $I V \mathrm{~s}$ have been successfully flown and will be used to carry scientific instruments in the immediate future.

Along with the increased activity in Canadian space programs there has been a general broadening of interests. The Meteorological Branch of the Department of Transport (DOT) Meteorological Satellite Data Laboratory is conducting a program to produce applications of satellite observations to the problems of meteorology and ice reconnaissance. In the field of communications satellites, the DOT has a joint program with NASA in which Canada participates in the testing of such spacecraft as Telstar, Relay and Syncom and two experimental ground stations for the development and use of communication satellite systems are nearing completion at Halifax and Toronto.

Canadian universities have continued to be very active in the field of space research. Nine university groups have programs involving the instrumenting of rockets, balloons or satellites for upper atmospheric studies. The McGill University program of gunlaunched vehicles in the Barbados known as HARP (High Altitude Research Program) has been carried on with considerable success. About 100 Iaunchings were made in 1965. Improvements have been made to both the gum and the vehicles and successful measturements have been made of wind shears and atmospheric constituents in the $100-\mathrm{km}$. region. A gun and test range has been set up near Highwater, Que. This program is carried on in collaboration with the U.S. Army.

Much of the foregoing work is shared with Canadian industry. Civilian contractors are producing instruments and space vehicles for both Canadian and foreign experimenters. In some programs, such as the Alouette satellite and the development of Black Brant rockets, industry is playing a major role. Other work of great importance for the space programs, such as fundamental research on materials and in plasma physics, is also being carried on in industrial laboratories.

## Section 4.-Research in Geophysics and Astronomy

In this edition of the Year Book, research in the field of geophysics is covered in Chapter I under the heading of Geology and Economic Minerals of Canada, pp. 30-32. The following item on this subject gives brief additional data on current (1966) projects and facilities. A special article on Astronomy in Canada, appearing in the 1965 Year Book at pp. 47-55, indicates in some detail the advances made in astronomical research and educational facilities; the write-up on p. 400 mentions the highlights only.

Geophysics.*-Geophysics-the study of the earth, including the oceans and atmosphere by the methods of physics-embraces a number of fields, each a major science in itself, such as geodesy, seismology, terrestrial magnetism, meteorology, oceanography and hydrology. Work in geophysics in Canada is carried on by a number of Federal Government departments, some provincial governments, nearly all universities and by companies engaged in geophysical prospecting for oil or minerals.

Currently, in the field of seismology, the 25 seismograph stations operated by the Dominion Observatory, with the co-operation of universities in several cases, provide good coverage of the country for the recording of earthquakes; an additional station is being constructed at Suffield, Alta., by the Defence Research Board. The regular stations are supplemented by a special array of detectors at Yellowknife, N.W.T., which is operated by the Dominion Observatory as part of a world net of highly sensitive detection stations for nuclear explosions.

Measurements of both the gravitational and magnetic fields of the earth were extended during 1965-66 over land areas by the Dominion Observatory and the Geological Survey, and over the oceans by the Bedford Institute of Oceanography. These measurements provide information that is extremely useful in the study of concealed geological structures. Recent projects have included an intensive survey of Hudson Bay, which may be the site of a considerable accumulation of sedimentary rocks and therefore of interest in petroleum exploration, and the measurement of the magnetic field over the north Atlantic Ocean by airborne magnetometer. Because the north magnetic pole is located in Canada, studies of magnetic disturbances and their relation to conditions in the upper atmosphere are of importance in Canadian geophysical research. The National Research Council, on Jan. 1, 1966, assumed control of the rocket range at Churchill, Man., which was built by United States agencies (see p. 390). This facility is now available for both government and university research. McGill University has extended its program of launching experimental rockets from guns. A most interesting development has been the discovery that important information can be obtained by simultaneous measurements at "conjugate points", similarly located with respect to the north and south magnetic poles. For the conduct of this work, the National Research Council has constructed a laboratory at Great Whale River, Que., which is conjugate to Byrd Station, Antarctica.

The Canadian program for the International Hydrological Decade, a ten-year study of the world's freshwater resources, has been developed in detail. Experimental basins across the country have been selected for the observation of the effects of changes in surface features on the amount and quality of ground water.

Meteorology includes not only the routine forecasting carried out principally by the Meteorological Branch of the Department of Transport (see p. 75), but also research in special problems by the Branch and by at least 12 university groups. These problems include controlled experiments in weather modification, the mechanics of hail formation, and micrometeorology, which is the detailed investigation of meteorological conditions in regions of small extent.

[^131]During 1965-66, geophysical exploration for oil, chiefly by means of seismic waves from small explosions, was carried out by several companies in Western Canada and also offshore in the Paeific and in the Atlantic Grand Banks area. Prospecting for minerals by magnetic and electromagnetic measurement continued in many areas, and was directly responsible for the discovery of a new lead-bearing orebody in the Pine Point area of the Northwest Territories.

Astronomy.*-Modern astronomical research is based on observations secured with complex optical and radio telescopes. The major centres of this research in Canada have developed within the Federal Government and at a few universities. Research in optical astronomy began early in this century at the Dominion Observatory, Ottawa, and this was followed by the construction of larger telescopes at the Dominion Astrophysical Observatory, Victoria, and the David Dunlap Observatory of the University of Toronto. Other Canadian universities teaching astronomy include the University of Western Ontario, Queen's University, the University of Waterloo, the University of Saskatchewan, the University of British Columbia and Victoria University. Some of these universities have their own small observatories. A new observatory, commemorating the visit of Her Majesty Queen Elizabeth II to Canada in October 1964, is under construction on Mount Kobau in southern British Columbia. It will be equipped with a large reflecting telescope 150 inches in diameter, in addition to smaller telescopes, and will be a national observatory available to astronomers throughout the country. Completion of the large telescope is scheduled for about 1973.

Canada first entered the field of radio astronomy, the study of radio emissions from heyond the earth, in 1946 when the National Research Council began its study of solar radio waves. Radio astronomy has expanded rapidly and there are now radio telescopes operated by the University of Toronto, by Queen's University, by the Dominion Observatory near Penticton, B.C., and by the National Research Council at a large observatory in Algonquin Park, Ont., where a steerable radio telescope 150 feet in diameter began observations in 1966. An 84-foot parabolic telescope and two large arrays of antennas are in operation at the Penticton site.

Canadian astronomers are engaged in various specialized fields of research. In the study of the solar system the sun has been studied for many years by both optical and radio techniques with emphasis on solar flares and other phenomena which affect the exvironment of the earth. Solar eclipses in which the path of totality crosses Canada have been observed whenever possible. Only minor attention has been devoted to study of the planets but major efforts have gone into meteor research. Both photographic and radar equipment are employed in this work and the study of meteor spectra and radar echoes from meteor trails have been particular specialties. There is an increasing interest in the related field of meteorites and Canada has figured prominently in the study and interpretation of old craters caused by the impact of huge meteorites.

Stellar astronomy has been the largest single field of Canadian astronomy. One aspect of this is the accurate determination of the positions and motions of stars in the sky. The Dominion Observatory is continuing an active program of positional astronomy aided by new and highly specialized instruments. The large telescopes at Victoria and Toronto have been used primarily for spectroscopy, one of the major tools of astrophysics. Several programs have been completed in which large groups of stars have been studied individually to determine their true luminosities and motions in the line of sight. The results have then been used for research on the structure of the earth's Milky Way galaxy. From spectroscopic studies of certain types of close double stars, information on such properties as the size, mass, density and temperature of individual stars is secured. Stars whose light varies in intensity have been studied by photography for many clusters of stars and are also studied by photoelectric devices mounted on the telescopes at Victoria, Toronto and the University of Western Ontario.

[^132]Although the optical telescopes in Canada have not been used for extragalactic research, many of the stronger sources in the field of radio astronomy are now known to be exceedingly distant objects far beyond the stars of the earth's galaxy. Canadian radio telescopes are, and will continue to be, engaged in the observation of such sources. At the same time they are also involved in the study of clouds of gas between the stars of the Milky Way system and this work complements the knowledge gained from spectroscopic research with optical telescopes. The large size of the Queen Elizabeth II telescope planned for Mount Kobau will guarantee Canadian astronomers an opportunity to become active in all fields of extragalactic astronomy and will provide essentially complete facilities for astronomical research in Canada.

## Section 5.-Other Scientific and Industrial Research Facilities

This Section outlines research facilities and activities other than those covered in Sections 1 to 4-various federal departments and agencies, provincial organizations, universities and industry. The first three types of institutions-federal, provincial and univer-sity-have, of course, an interest in problems of industrial significance. As already stated, although many Canadian industries now possess research facilities-some of them quite extensive-much of the industrial research to date has been done under government auspices.

## Subsection 1.-Federal Organizations

Research activities in the various Federal Government departments and agencies have expanded rapidly, at first because of the need for speeding up the production of raw materials, which were for many years the basis of Canada's export trad., and later because of increasing interest in the processing of raw materials, the necessity of meeting the needs of national defence and the developing consideration for many human and resource requirements. In addition to the activities of the National Research Council, Atomic Energy of Canada Limited and the Department of Energy, Mines and Resources dealt with in Sections 1 to 4, federal agencies involved in research include the Departments of Agriculture, Forestry and Rural Development, Fisheries, other Branches of the Energy, Mines and Resources, National Defence, National Health and Welfare, and Indian Affairs and Northern Development.

The scientific work of the Department of Agriculture is described in Chapter XI of this volume, the investigations conducted by the Board of Grain Commissioners in Chapter XXI, the specialized work in scientific forest research in Chapter XII, scientific services concerned with Canada's mineral resources conducted by the Department of Energy, Mines and Resources in Chapters I and XIII, investigational work of the Department of Fisheries in Chapter XV, research of the Canadian Wildlife Service of the Department of Indian Affairs and Northern Development in Chapter I, medical and other research conducted by the Department of National Health and Welfare and other agencies in Chapter VI, and the work of the Defence Research Board in Chapter XXVI.

The Department of Indian Affairs and Northern Development operates a permanent scientific research laboratory north of the Aretic Circle. This laboratory, at Inuvik, N.W.T., has year-round facilities specially designed for Arctic research and serves as a base for extensive field studies in the Western Arctic. It accommodates a permanent staff of eight scientists from many disciplines and up to 16 visiting researchers. The operation of the laboratory is in charge of a manager working under the direction of the Northern Co-ordination and Research Centre of the Department.

## Subsection 2.-Provincial Organizations

Five of Canada's provincial governments (Nova Scotia, New Brunswick, Manitoba, Saskatchewan and Alberta) have established research councils or foundations and two others (Ontario and British Columbia) have assisted financially in the setting up of such
organizations. Quebec has also announced its intention of establishing a provincial research council and industrial research centre in the near future. Most provincial governments have university laboratories to consult, particularly about local industrial and agricultural problems, and many individual departments have facilities for research in their particular fields of endeavour or assist research through the provision of financial aid to students working in those and other scientific fields. Agriculture is particularly well covered because of its importance as an export industry but the provinces are also intensely interested in their other natural resources. Their efforts in the fields of agriculture, forestry, mining and fisheries are outlined in the Chapters dealing with those subjects (see Index).

Nova Scotia Research Foundation.-This body was created by the Government of Nova Scotia in 1946 to give its people scientific and technical assistance in finding new and better ways to utilize the resources of the forest, the sea, the farm, the mine and the process industries. To this end it seeks to correlate and further scientific work on local problems and available resources. Within three years a new $\$ 1,250,000$ laboratory building, to be financed by an Atlantic Development Board grant, will occupy a commanding 10 -acre site in Dartmouth, N.S., and will house a staff of about 100 , including 70 scientists and technicians. The Foundation assists universities, colleges, research groups, industries, provincial and federal departments and individuals by loans of equipment, grants, seholarships, laboratory and summer assistants, library, cartographic, photogrammetric and translation services, and technical information. It has supported or collaborated in work on breeding new varieties of plants and root nodule bacteria; on antibioties, poultry, blueberry culture, coal-burning equipment, the constitution and gasification of coal, the non-destructive testing of mine equipment, the utilization of anhydrite, diatomite, fish waste, gypsum, seaweed, slag, slab wood and fertilizing materials. It has conducted geophysical, geological, air pollution and seaweed surveys as well as forest aphid, forest ecology and genetic studies and has assisted studies on the nutrient cycles of lakes, on X-ray crystallography, on pressures in underground strata and on crop damage by predators. Its Geophysical Division is equipped to undertake all types of magnetometric, gravimetric, resistivity, seismic and electromagnetic explorations, and so assess the possibilities of the existence of oil, gas, potash and other economic mineral deposits in Nova Scotia and in the surrounding sea. The Technical Services Division provides free techuical information to industries in the province and offers them research and development services and facilities in the fields of physics, chemistry, engineering and operations research. The Operational Research Division applies operational research techniques to problems of distribution and the utilization of natural resources of the province. A Research Foundation Bulletin is issued from time to time to keep industry advised of Foundation activities and also of important discoveries in science and technology. The Research Record provides a descriptive account of past research projects.

The New Brunswick Research and Productivity Council.-The aims of this Council, established by an Act of Legislature in 1962, are inter alia to 'promote, stimulate and expedite continuing improvements in productive efficiency and expansion in the various sectors of the New Brunswick economy" The Council receives an operating grant from the provincial government and support in specific areas from federal sources. It undertakes contract research on a repayment basis from industry. Its laboratories are at present 10,000 sq. feet on a seven-acre site in Fredericton, and plans are being drawn up to extend this to a total of $50,000 \mathrm{sq}$. feet with the support of a capital grant of $\$ 1,250,000$ from the Atlantic Development Board. Staff at the beginning of 1965 numbered 20 and is expected to increase to 35 by the beginning of 1966. The work of the Council is centred on providing industry with engineering, 'trouble-shooting' and technical information services, on training courses in management techniques and on applied research in the fields of mechanical and chemical engineering, food technology, microbiology and mineral technology. Policies are established by 13 Council members representative of provincial industry, labour, government and education with the help of specialist advisory committees.

The Executive Director has supervision over and direction of the work of the staff and has charge of all matters relating to the administration of the affairs of the Council. The Chairman of the Council reports annually to the Premier of the province.

Manitoba Research Council.-The Manitoba Research Council consists of seven members representing natural-resource-based industry, manufacturing, the University of Manitoba and labour. Its work is financed by provincial government appropriations, although fees and service charges may be levied for its services. The objectives of the Council are to promote or carry on, or cause to be promoted or carried on, research and scientific inquiries respecting agriculture, other natural resources, industry or other segments of the economy of the province and to help secure for Manitoba the benefits of research and scientific inquiries carried on elsemhere. The preponderance of small industrial establishments in Manitoba and their need for assistance in developing a more scientifically based production capability to improve their competitive position in domestic and world markets was the major technical reason for the establishment of the Council. At present it maintains an office and staff in the Provincial Government Administration Building (Norquay Building) in Winnipeg but plans for a major research and development park, under study for the past two years, have been announced. The central core of the park will inciude applied research laboratories operated by the Manitoba Research Council, complete with attached test bays and small industry product research modules; a series of pilot plant operations; allied industrial and resource research establishments: and common facilities such as a technical library, translation and reproduction facilities and computer services. The aim of this Research and Development Centre is to bridge the gap between pure research and industrial production and to give Manitoba a superior capacity in developing technology coupled with the economics of large-scale output.

Saskatchewan Research Council.-This Council was set up in 1947 under an Act of the Government of Saskatchewan. The Council carries out research in the physical aciences, both pure and applied, with the aim of improving the provincial economy. It is therefore particularly concerned with the commercial exploitation of provincial resources and the scientific aspects of business. At first the Council had no scientific personnel and laboratory facilities of its own. Its research program was carried on at the University of Saskatchewan and was promoted by means of grants to members of the staff and scholarships to graduate students. The 1947 Act was amended in 1954 to empower the Council to acquire property, employ staff and conduct its own financial affairs. Laboratory buildings were erected on the university campus in 1957 and were extended in 1963. In the present program of research the emphasis is on water and mineral resources, fields of agriculture not covered by other organizations, and technical assistance to industry. A large part of the program is carried out by the permanent staff, now numbering about 60 , but some of the Council's research is still promoted by grants to university staff. The members of the controlling body, the Council proper, are appointed by the LieutenantGovernor in Council and consist of representatives of the government, industry and the university.

Research Council of Alberta.-The Province of Alberta set up a scientific and industrial Research Council in co-operation with the University of Alberta in 1921, the promotion of mineral development within the province being the chief purpose leading to its establishment. The Council operates under an Act somewhat similar to that which set up the National Research Council and is principally financed by provincial government appropriations. The present program is directed to the application of basic and applied science toward the development of the natural resources of the province and toward the establishment of new industrial operations within the province. Investigations in the Council laboratories and pilot plant are organized into two branches-the Earth Sciences Branch which includes all work on groundwater geology, geological surveys and research, mineral beneficiation and soils, and the Fuels Branch which includes work on coal, petroleum, natural gas, ehemical process and product development, and gasoline and oil testing.

There are, in addition, project groups dealing with industrial engineering services, highway research, a co-operative program on cloud physics with reference to the hail problem, and a number of special projects.

The operations of the organization are controlled by a Council of ten individuals representative of the government, the university and industry. The various research projects are reviewed by advisory committees composed of specialists in each field, drawn from industry, the university and the provincial government.

The main Council laboratories are located on the University of Alberta campus in Edmonton. A new pilot plant facility has recently been completed in the Clover Bar area east of the city.

Ontario Research Foundation.*-The Ontario Research Foundation, established in 1928, operates as an independent corporation, deriving its powers from a special Act of the Legislature and governed by a Board of Governors appointed by the LieutenantGovernor in Council of Ontario. The organization was financed initially by an endowment fund composed of subscriptions from commercial and industrial corporations, and from private individuals, and a grant from the provincial government. However, most of its current income is derived from contract research undertaken for industry, although income is also obtained from the various government departments for research and other work undertaken on a contract basis. The Foundation is concerned primarily with the development of industry and the development of Ontario's natural resources through the application of scientific research. However, Foundation activities are not confined to the province; research contracts are routinely handled for any organization, without reference to location. Being primarily an industrial research institution, the Foundation's main areas of scientific endeavour are chemistry, physics, metallurgy, applied microbiology, textiles and engineering. A field engineering and technical information service is provided free to industry, sponsored by the Ontario Department of Economics and Development and by the National Research Council. In 1967 the Ontario Research Foundation relocated in Sheridan Park, Ont., where it is the nucleus organization of the Sheridan Park Research Community.

British Columbia Research Council.*-This Council is a non-profit, industrial research institute with offices and laboratories on the campus of the University of British Columbia. Its function is to enable even the smallest firms to improve their competitive position in Canadian and world markets by the use of the most up-to-date scientific knowledge. The Council provides a free technical information service in collaboration with the National Research Council, carries out contract research for clients on a confidential basis and initiates "in house" research programs designed to promote and utilize the resources of the province. The Council is active in the areas of applied biology, chemistry, engineering, physics, operations research, industrial market studies and economic feasibility studies.

## Subsection 3.-University Research

Research conducted in the universities falls into three broad categories: research projects carried out by faculty members in addition to their teaching duties; investigations by students, under the guidance of professors, to meet the requirements for advanced degrees; and larger projects or programs undertaken co-operatively on a faculty or interfaculty basis in large laboratories or specialized institutes connected with the university.

Faculty Resources.-Research is generally considered to be an important part of the function of the university teacher and many of the 15,000 full-time staff members of Canadian universities can be assumed to be engaged in such activity. With most staff members, only the time that can be spared from teaching duties can be devoted to research during the teaching session but, for those not teaching summer classes, the summer months

[^133]offer an opportunity for relatively uninterrupted research activity. The projects undertaken are very diverse in character and defy brief classification here but information concerning them is available in the annual reports of the presidents of the individual universities. For the humanities only, a more convenient source of information about the scope and diversity of Canadian scholarship is the "Bibliography of Scholarly Publications" included in The Humanities in Canada, a report prepared by F. E. L. Priestley for the Humanities Research Council of Canada and published by the University of Toronto Press in 1964.

Student Resources.-Prior to World War II, higher education in Canada concentrated almost exclusively on the production of trained professionals to serve the community as doctors, lawyers, engineers, etc., and only three Canadian universities had established graduate schools. In 1964-65, however, 34 universities and colleges were offering work at the graduate level, 22 of them with doctorate programs. The writing of a research thesis is an important part of the requirements for the award of the higher degrees toward which the students enrolled in these schools work. Compilations of the numbers of such students by sex, course, university, degree sought and year of expected graduation may be found in the annual series Statistical Summary of Students Registered in the Graduate Schools of Canadian Universities in Physical and Earth Sciences, in Architecture and Engineering, and in Life Sciences, published by the National Research Council, and in Graduate Students in the Humanities and Social Sciences Registered at Canadian Universities 1968-64, published by the Association of Universities and Colleges of Canada.

In 1964-65, the total enrolment (full-time and part-time) in graduate schools of Canadian universities and colleges amounted to 13,797 , of whom 2,320 were women. In the same year, 569 Ph. D.s and 4,095 Master degrees and licences were awarded.

Financial Resources.-Financial support for university research comes primarily from five sources: departments and agencies of the Federal Government, quite heavily committed to support research largely in the natural and life sciences; industry, which supports both basic and applied research; private foundations, which have for many years been generous supporters of research, sometimes in selected fields; provincial governments; and the United States Government. Among these, the Federal Government is the largest single contributor. In 1964-65, its share of the total provision of funds for university research amounted to about 57 p.c., provincial governments contributed about 15 p.c., 10 p.c. came from private foundations, a little over 5 p.c. from industry and the remainder from other sources.

Although federal funds are channelled through almost a score of different departments and agencies, by far the greatest part of the total is disbursed by four of them: the Defence Research Board, the Department of National Health and Welfare, the Medical Research Council and the National Research Council. Most of the assistance is in the form of direct grants in support of research projects undertaken by university staff members but a significant part of the total program is the assistance given to graduate students working for higher degrees. Funds are also made available to defray associated expenditures, such as those incurred in the publication of research journals and the holding of conferences.

The activities of the Defence Research Board in support of university research consist mainly in the provision of funds for projects in basic sciences that are relevant to the defence of the nation. Funds administered by the Department of National Health and Welfare and the Medical Research Council go chiefly to support research in the medical and para-medical sciences. The National Research Council confines its support to the physical and earth sciences, architecture and engineering, and the life sciences. The total amount of funds disbursed by these and the other Federal Government agencies in 1964-65 was over $\$ 25,000,000$, not including more than $\$ 8,000,000$ in scholarships and bursaries paid to students.

The major source of funds for the promotion of the arts, humanities and social sciences, including research in these fields, is the Canada Council (see p. 375). It is rather difficult to define and categorize the various uspects of the Council's support of university research. Broadly speaking, however, three main categories can be identified: assistance to individual postgraduate students and research fellows; grants-in-aid of particular research projects; and assistance with ancillary research activities such as the compilation of indexes and bibliographies, purchases for libraries, publication costs and travel expenses. The tota3 disbursed for the first two of these purposes in $1964-65$ was some $\$ 270,000$, distributed about equally between each.* As to the third, a significant portion of the $\$ 300,000$ spent on special projects and grants-in-aid, and on grants to organizations could be interpreted as assistance to university research in the humanities and social sciences.

In addition, some Federal Government agencies such as the Defence Research Board and the Departments of Manpower and Immigration, Labour, and Indian Affairs and Northern Development operate programs of university grants and contracts for research in economies, anthropology, sociology and related disciplines, but the total amount made available under these programs is not large.

## Subsection 4.-Industrial Research

Industrial research in Canada is changing very rapidly. The emergence of the country as a highly industrialized society, its entrance into multitudinous fields of production, the rapid growth of many large nation-wide industries, the serving of a discriminating domestic market and the meeting of competition from abroad have had the effect of making Canadian manufacturing establishments research conscious and many of the larger ones now possess competent research organizations.

On Nov. 29, 1962, an amendment was passed by Parliament to the Income Tax Act, allowing corporate taxpayers, commencing in 1962, to deduct 150 p.c. of their increased expenditures on scientifie research for industrial purposes when computing taxable income. This amendment is evidence of the Federal Government's desire to encourage industrial research.

Industrial Research and Development Expenditures.-The latest biennial DBS survey of expenditures on industrial research in Canada was conducted in 1964 and provided figures for the calendar year 1963 and estimates for the year 1964. These figures are summarized in the following tables; details are contained in DBS publication Industrial Research and Development Expenditures in Canada, 1963 (Catalogue No. 13-524).

The type of industrial research and development covered by these surveys ranges from pure research designed to obtain new knowledge in the physical and life sciences to conceiving and developing new products and processes, or major changes in products and processes, and bringing them to the stage of production. Such activities as market research and process and quality control are excluded. Companies surveyed were asked to report the cost of research and development done within the company in Canada and payments for research done outside the company in Canada; estimates of payments for research and development conducted outside the company and outside of Canada were also requested.

Total figures show considerable fluctuation in expenditures on research and development over the years surveyed. However, this fluctuation has been caused largely by variations in Federal Government contracts to the aircraft sector of the transportation equipment industry. If all funds received from the Federal Government are removed from annual expenditures, a trend of continuous expansion is revealed. In 1963, 701 firms reported research expenditures; of these, 16 accounted for one half of all intramural research expenditures.

[^134]
## 1.-Total Research and Development Expenditures, 1955-64

| Year | Expenditure on Research and Development in Canada |  | Expenditure on Research and <br> Development Outside Canada | Total |
| :---: | :---: | :---: | :---: | :---: |
|  | Done Within Reporting Company | Done Outside Reporting Company |  |  |
|  | \$000,000 | \$ 000,000 | \$'000,000 | \% 000,000 |
| 1955. | 51.4 | 1.9 | 12.1 | 65.4 |
| 1957 ........... | 124.5 | 4.2 | 19.8 27.0 | 148.5 |
| 1958 (estimste). | 132.5 96.6 | 3.3 | 21.7 | 121.6 |
| 1960 (estimate) | 81.7 | 1 | 27.3 | 109.0 |
| 1961........... | 114.0 | 4.3 | 31.2 | 147.12 |
| 1962 (eatimate). | 124.5 | ${ }^{1} 8$ |  | 159.9 |
| 1983........... | 180.2 190.0 | ${ }_{1}^{8}$ | 37.8 38.5 | 228.5 |
| 1884 (estimate). |  |  |  |  |

I Inchided with expenditures outside Cansda. ${ }^{2}$ Since extramural payments include at number of payments
which become intramural expenditures ior the recipient frms, the totals bave been adjusted to exclude duplication.
Three industries-transportation equipment, electrical products, and chemicals and chemical products-have accounted for more than one half of all research and development performed in Canada every year since 1955. In 1961, for the first time, the research and development expenditures of the transportation equipment industry, which are used largely for aircraft development, did not exceed those of every other industry. In that year the electrical products industry, which includes electronic equipment, was the leading performer of industrial research and development. In 1963, the transportation equipment industry, with $\$ 31,200,000$ assigned to research and development expenditures, was still behind the electrical products industry; however, if payments made outside Canada are included, the transportation equipment industry was first ( $\$ 39,300,000$ ) and the electrical products industry was second ( $\$ 34,500,000$ ).

## 2.-Eesearch and Development Expenditures In Canada, by Major Industrial Group, 1961 and 1963

| Group | 1981 |  | 1963 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Amount | $\begin{aligned} & \text { P.C. } \\ & \text { of } \\ & \text { Total } \end{aligned}$ | Amount | $\begin{gathered} \text { P.C. } \\ \text { of } \\ \text { Total } \end{gathered}$ |
|  | \$ |  | \$ |  |
| Transportation equipment. . . . . | $17,373,480$ $28,199.659$ $20,292,535$ | 15.0 24.3 17.5 | $31,202,042$ $33,435,678$ $25,021,027$ | 19.1 20.5 15.3 |
| Chemaicais and chemical products | 20,292.535 | 17.5 | 25,021,027 | 15.8 |
| Totala. . | 65,865,674 | 56.8 | 89,658,748 | 54.9 |
| Other industries. | 50.018,214 | 43.2 | 73.788.892 | 45.1 |
| Grand Tetals. | 115,883,888 | 100.0 | 163,447,640 | 100.0 |

Table 3 shows intramural research and development expenditures over the four years 1961-64. The transportation equipment industry is given separately because of substantial fluctuations in its expenditures. Most of the other industries have increased their research and development activities over the period; the chemical and electrical products industries reported the greatest absolute increases, together having accounted for over 45 p.c. of total intramural expenditures (excluding those of transportation equipment) since 1961.

## 3.-Intramural Research and Development Erpenditures, by Industry, 1961-64

| Industry | 1961 | 1962 | 1963 | $1964{ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: |
|  | \% | 8 | \$ | \% |
| Mining, quarrying and oil wells.. | 4,820,816 | 5,305,551 | 6,560,188 | 6,840,782 |
| Manufacturing- |  |  |  |  |
| Foods and beverages. | 2,591,487 | 2,499.484 | 4,299,244 | 5,019.982 |
| Rubber products. | 1,425,008 | 1,576,587 | I, 873.549 | 1,890,000 |
| Textile products. | 1,487,152 | 1,562,364 | 1.875.104 | 1.984.415 |
| Wood products | 98.050 | $148+136$ | 171,703 | 204,700 |
| Furniture and fixtur | 113.140 | 123,852 | 177,821 | 105,500 |
| Paper products. | 6,545,370 | 7,201,684 | 9,099,560 | 10,228,722 |
| Primary metal | 7.053,761 | 8,217.319 | 10,434,484 | 11,111.600 |
| Metal labricating | 2,361,759 | 3.093,503 | 4,160,003 | 3,004,138 |
| Machinery | 5,309,036 | 5, 836,531 | 6,982,317 | 6.881,366 |
| Electrical apparatus and supplies | 28,179,519 | 28, 435.263 | 33,288,516 | 37,241,774 |
| Non-metalitic mineral products | 1,488,330 | 1,502.480 | 1,852,082 | 1,907,074 |
| Products of petroleum and coal | 5.529.202 | 6,450,932 | 7,583,466 | 8,875,000 |
| Chemicals and chemical products. <br> Other manufucturing (incl tobaco and tobeco | 19.573.959 | 21,321,895 | 24, 449,969 | 22,620,425 |
| products, leather products, clotbing and knitting mills, and miscellaneous), | 3,863,690 | 6,018,889 | 7,625,466 | 9,021,108 |
| Transportation, storsge, commanication and other utilities. . | 3,185,165 | 3,642,448 | 4,029,545 | 0,338,000 |
| Other non-manufacturing (incl. construction industry, scientific and engineering services and trade associations). | 2,990,882 | 3.279,228 | 4,635,726 | 5,781,930 |
| Totals (excl transportation equipment)... | 96,616,306 | 106, 216, 226 | 129,038,743 | 141,856.514 |
| Transportation equipment | 17,366+655 | 18,291,984 | 31,132, 110 | 48,159,000 |
| Totals, All Industries | 113,982,961 | 124,588,210 | 160,170,853 | 190,015,514 |

## 'Estimates based on companies' intentions.

Among the product groups, the largest percentage of research and development expenditures was made in 1963 for the electrical products group, which accounted for 22.9 p.c. of the total compared with 18.9 p.c. in 1961 . The chemicals group, including drugs and medicines, which accounted for 20.0 p.c. in 1961 and was in first place in that year, declined to 10.6 p.c. in 1963 . The transportation equipment group as a whole received 18.8 p.c. of the total in 1963 , of which aircraft and parts accounted for 16.7 p.c. as compared with 15.7 p.e. in 1961.

## 4.-Intramural Research and Development Expenditures, by Product Group, 1563

| Product Group | Amount | P.C. Total | Product Group | Amount | $\begin{aligned} & \text { P.C. } \\ & \text { of } \\ & \text { Total } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ |  |  | \$ |  |
| Aircraft and parts.... | 26,729,646 | 16.7 | Machinery (except electrical)... | 8,271,375 | 5.2 |
| Chemicals (except drugs and | 26, 20,040 |  | Motor vehicles and parts....... | 2,941,619 | 1.8 |
| medicines)............... | 12,964,859 | 8.0 | Petroleum sad natural gas...... | 6,480.500 | 8.1 |
| Drugs and medicines. | 4,148,723 | 2.6 | Primary metals............... | 12,906,529 | 8.0 |
| Electrical equipment (ercept electronics) | 9,443,139 | 5.9 | Professional and scientific in- struments................. | 4,092,137 | 2.6 |
| Electronics. | 27,232,687 | 17.0 | Other............................ | 33.834,288 | 21.3 |
| Fabricated metals............. | 2,146,454 | 1.3 |  |  |  |
| Forest Products- <br> Pulp and paper. | 7,509,970 1,468,927 | 4.6 0.9 | Totak | 164,170,853 | 10.6 |

The sources of research funds for intramural research and development in the different industries are shown in Table 5 for 1963. These figures are not comparable with those published for previous years.

## 5.-Sources of Funds for Intramural Research and Development, by Industry, 1963

| Industry | Reporting Company | Parent, Affiliated or Subgidiary Companies | Government Funds | Contract Work for Other Companies | Other | Totsl |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | 8 | \$ | \% | * | * |
| Mining, quartying and oil wells...... | 6,011,055 | 27,582 | 124,900 | 218.422 | 178,229 | 6,560,188 |
| Manulacturing- | 3.973,514 | 50,848 | 173,684 | 400 | 100, 800 | 4,299,244 |
| Rubber products. | 1,507,637 | 347,912 | 18,000 | - | - | 1.873.549 |
| Textile products. | 1,858,104 | - | 17,000 | - | - | 1,875,104 |
| Food products... | 113,043 | - | - | - | 58.660 | 171,703 |
| Furniture and fixtures, | 117,821 | - | - | $\cdots$ | - | 117,821 |
| Paper and altied industries. | 7.142,082 | 134,841 | 70.237 | 174,200 | 1,878,200 | 9,099,560 |
| Primary metal. | 10,336,987 | 32,183 | 1,438 | 31.214 | 32,662 | 10.434, 484 |
| Metal fabricating | 3.213,447 | 3,500 | 929,056 | - | 14,000 | $4.160,003$ |
| Machisery. | 6,043,553 | 678,731 | 260,033 | - | - | 6,982,317 |
| Transportation equipment. | 15,826.953 | 203.032 | 13,761,691 | 7,434 | 1,333,000 | 31,132,110 |
| Electrical products........ | 23,057,649 | 378,336 | 9,358, 034 | 220,497 | 274,000 | 33,288,516 |
| Non-metalic mineral products.... | 799,450 | 954, 469 | 98, 163 | - | - | 1.852,082 |
| Petroleum and cosl products...... | 7.407.713 | - 7 | 42,121 | 133,632 | - | 7,583,466 |
| Chemicals and chemical products. | 21,931,396 | 1,770,624 | 738,949 | - | - | 24,449, 969 |
| Other manufacturing (incl. tobacco and tobacco products, leather products, clothing and knitting mills, and misceilaneous). | 4.634,575 | 42,000 | 2,315,200 | 633,691 | - | 7, 625,466 |
| Transportation, atorage, communication and other utilities, .......... | 4,004,548 | ,000 | 25,000 |  | - | 4,029,545 |
| Other non-manufacturing (incl. the construction industry, scientific and engineering services and trade associations). | 360,482 | 2,463.924 | 265.830 | 1,361,398 | 183,982 | 4,635.726 |
| Totals | 118,344,006 | 7,098,980 | 28,199,436 | 2,780,888 | 3,753,543 | 160,170,853 |
| Percentage of Total Funds........... | 73.9 | 4.4 | 17.6 | 1.7 | 2.3 | 100.0 |

## Section 6.-Federal Government Expenditures on Scientific Activities

Information on Federal Goverament expenditures on scientific activities is provided by biennial surveys carried out by the DBS since 1959. Each survey covers the actual costs of the preceding fiscal year and the estimated expenditures of the current year on the scientific programs of the reporting departments and agencies. At present, only activities in the physical and life sciences are included, although eventually the surveys will be expanded to include the social sciences and humanities. For survey purposes, "scientific activities" consist of research and development, scientific data collection, scientific information and scientific scholarships. Data are also collected on copital expenditures on plant for scientific activities and on personnel employed in research and development.

As shown in Table 6, total costs of scientific activities have risen every year since 1962-63. The annual increases were 16 p.c., 11 p.c. and 19 p.c. The National Research Council and the Department of National Defence together accounted for nearly 42 p.c. of the total expenditures, National Defence being the largest individual spender. More detail on the expenditures of the individual departments and agencies is shown for 1964-65 and 1965-66 in Table 7.

## 6.-Summary Statistics of Federal Government Expenditures on Scientfic Actlyities, Years Ended Mar. 31, 1943-66

| Activity and Department or Agency | 1062-63r | 1983-64r | 1984-85r | 1965-661 |
| :---: | :---: | :---: | :---: | :---: |
| Scientific Activity- | \$ ${ }^{\prime} 000,000$ | \$ 000,000 | \$ 0000,000 | \$ 0000,000 |
| Conduct of research and development. | 170.8 | 195.4 | 204.6 | 244.5 |
| Grants-in-aid of research | 20.8 | 26.8 | 36.1 | 49.5 |
| Capital erpenditures on plant Ior acien | 28.9 | 37.2 | 50.2 | 56.8 |
| Scientific dats collection | 24.1 | 25.6 | 24.4 | 25.3 |
| Schentife information............ | 9.7 2.8 | 10.1 2.8 | 12.8 3.8 | 14.5 5.5 |
| Totals, Sclentific Activities | 257.0 | 297.9 | 331.8 | 395.2 |
| Department or AgencyAgriculture. | 29.6 | 30.6 | 33.4 | 39.4 |
| Atomic Energy (inel. Atomic Energy Control Board and Atomic Energy of Canada Ltd.) | 39.4 | 46.5 | 54.4 | 39.4 57.0 |
| Energy. Mines and Resources.............................. | 42.42 | $42.3{ }^{2}$ | $43.6{ }^{2}$ | $51.2^{2}$ |
| National Research Council (incl. Medical Research Council) National Defence- | 44.7 | 52.5 | 60.8 | 79.0 |
| Armed Forces. | 27.6 | 31.7 | 30.7 | 43.3 |
| Defence Research Board | 31.8 | 38.5 | 39.2 | 42.6 |
| Others. | 41.5 | 55.8 | 69.8 | 85.7 |
| Totals, Departments and Agemcles | 2750 | 297.8 | 331.8 | 356.2 |

[^135]
## 7.-Federal Government Expenditures on Scientific Activities, by Department or Agency,

 Years Ended Mar. 31, 1585 and 1966| Department or Agency | 1964-65 |  |  |  | 1965-661 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Cutrent Expend- itures on Research and Deveiop- ment | Current <br> Expenditures <br> on Other Scientific Activities | Capital Expenditures | Total <br> Funds <br> Applied | Current <br> Expend- <br> itures on <br> Research and <br> Develop. ment | Current <br> Expenditures on Other Scentific Activities | Capital <br> Expenditures | Total Funds Applied |
|  | \$000 | \$000 | 3'000 | \$ 000 | \$000 | \$ 000 | \$'000 | \$000 |
| Department of Agriculture......... | 28,738 | 668 | 6,003 | 33,409 | 28.852 | 728 | 9,812 | 39,380 |
| Atomic Energy (incl, AtomicEnergy Control Board andAtomic Energy of Canada Ltd.).Department of Fisheries.... |  |  |  |  |  |  |  |  |
|  | 36,946 | 47 | 17,327 | 54.320 | 42,694 | 65 | 14,227 | 58,976 15,036 |
|  | 9,277 | 25 | 1,647 | 10,949 | 11,597 | 23 | 3,418 | 15,036 |
| Department of Forestry and Rural Deveiopment. | 7.651 | 3,602 | 2,441 | 13, 894 | 9,473 | 3.999 | 1,732 | 15.204 |
| Department of Industry . . . . . . . . | 20.527 |  |  | 20,527 | 26,742 |  |  | 26,742 12 |
| Department of Enercy, Mines and Resources. | 5,954 | 1,086 | $\square$ | 7,010 | 10,887 | 1,461 |  | 12,356 |
|  | 15,550 | 23,885 | 4,170 | 43,611 | 17,576 ${ }^{2}$ | 24,720 ${ }^{2}$ | 8,877 ${ }^{2}$ | 51,173 |
| Department of National Healtiond Welfare. <br> National Regearch Council | 6,527 | 925 | 2,622 | 10.074 | 6,741 | 1.251 | 1,101 | 9,003 |
|  | 44,435 | 4,489 | 4,830 | 53.754 | 54,368 | 6,084 | B,200 | 66,652 |
| National Regearch Council <br> Department of Isdian Affairs and Northern Development, | 868 | 552 | 144 | 1,564 | 1,154 | 855 | 323 | 2,332 |
| Department of the Secretary of State. | 235 | 3,189 |  | 8,429 | 254 | 3,637 | 6 | 3,896 |
|  | 2,196 | 16 | 6,539 | 8,751 | 2,653 | 20 | 7,970 | 10,645 |
| Department of Veterans Affairs. Other civilian departments or agencies. | 429 |  |  | 29 | 438 |  |  |  |
|  | 372 | 4 | 21 | 397 | 406 | 4 | 4 | 4 4 |
| Totals, excluding National Defence. | 177,71 | 38,488 | 45, 749 | 261,948 | 213,847 | 42,835 | 58,667 | 310,313 |
| Department of National Defence. Armed Forces. | 62,9f8 | 2,476 | 4,449 | 69.893 | 80.202 | 2,492 | 3,186 | 85,880 |
|  | 25,678 | 2,289 | 2.6983 | 30,685 | 38,997 | 2,132 | 1,1573 ${ }^{3}$ | 43,286 |
|  | 37,290 | 187 | 1.751 | 39.228 | 40,205 | 360 | 2,009 | 42,57 |
| Defence Research Board. Totals, All Departments and Agencies. | 240,675 | 40,964 | 50,198 | 331,841 | 294,449 | 45,327 | 56,883 | 396,209 |

[^136]Department of Northern Affairs and National Resourcas. $\quad$ Many of the capital expenditures of the Armed
Forces are ungvajiable.

About three quarters of the Federal Government's payments for scientific activities are for the operating costs of research and development. Table 8 reveals an interesting change in the relative importance of the performing organizations. Although the Government continues to perform most of this research and development within its own establishments, its support of outside research is increasing; in 1962-63 intramural expenditures were almost 80 p.c. of the total but in 1965-66 they accounted for only about 62 p.c. Financial support of industrial research and development has more than tripled during the past four years and now represents over one fifth of the Federal Government's current expenditures on research and development compared with about one tenth in 1962-63.

## 8.-Federal Government Current Expenditures on Research and Development, Years Ended Mar. 31, 1563-66 <br> (Millions of dollars)

| Performing Organization | 1962-63x | 1963-64 | 1964-65: | 1965-661 |
| :---: | :---: | :---: | :---: | :---: |
| Reporting unit. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 151.2 | 162.3 | 165.3 | 181.9 |
| Canadian industry . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 29.2 | 35.9 | 45.0 | 69.7 |
| Educational institutions and individuals at auch institutions... | 17.4 | 20.0 | 26.8 | 37.9 |
| Others (incl. non-profit organizations, other governments and foreign recipients) | 3.0 | 4.0 | 3.6 | 4.4 |
| Totals, Erpenditures | 191.7 | 222.2 | 249.7 | 294. |

[^137]As shown in Table 9, most of the federally financed research and development projects are in the physical sciences (over 70 p.c.). Engineering alone receives over 40 p.c. of the total funds available. Within the life sciences, almost half of the Federal Government's expenditures are for projects in support of agriculture.

The three most important areas of investigation are military science, which absorbs about one third of the funds spent on research and development, nuclear science and agriculture, fishing and forestry.
9.-Federal Government Current Expenditures on Research and Development, by Scientift Field and Area of Investigation, Years Ended Mar. 31, 1965 and 1966
(Millions of dollars)

| Smentific Field | 1864-65 ${ }^{\text {r }}$ | 1965-661 | Scientific Field and Area of Invegtigation | 1964-65 | 1965-661 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Seientific Field |  |  | Scientific Fiek-concl. |  |  |
| Physical Seleutes. | 178.8 | 215.1 | Life Sctences | 66.9 | 79.0 |
| Engineering. | 101.6 | 129.6 | Agricultural gciences | 32.3 | 35.4 |
| Aeronautical | 28.1 | 28.5 | Biological sciences. | 18.7 | 22.1 |
| Chemical. | S.0 | 3.0 | Medical sciences. | 15.9 | 21.5 |
| Civil..... | 2.0 | 2.4 | Totals, All Scientific Fields. | 240.7 | 294.0 |
| Electrical and electronio | 81.9 | 30.5 |  |  |  |
| Mechanical Other..... | 16.5 | 30.8 | Arta of Investigation |  |  |
| Chemistry. | \$6.1 | 40.0 | Area of Investigation |  |  |
| Chemistry.... | 15.6 | 18.2 | Nuclear science.................... | 39.3 | 44.9 |
| Earth fciences | 8.9 | 10.3 | Space travel and commuvications..... | 4.7 | 9.4 |
| Metallurgy. | 3.8 | 4.2 | Military science ....... .............. | 81.0 | 100.3 |
| Meteorology | 2.1 | 2.5 | Agriculture, fishing and forestry ...... | 50.2 | 57.9 |
| Oceanography. | 4.4 | 4.7 |  | 2.9 2.4 | 3.9 |
| Phyeica, nuclear | 11.8 | 14.5 | Telecommunications. | 0.3 | 0.3 |
| Phyaica, non-suclear. | 20.9 | 22.6 | Health and hygiene................... | 14.3 | 21.0 18.8 |
| Other | 4.6 | 8.5 |  | 14.5 30.1 | 18.8 35.4 |

[^138]
## CHAPTER IX.-CRIME AND DELINQUENCY*

CONSPECTUS
Page Page
Section 3. Juventle Delinquents. ..... 425 Procedore. ..... 412
Section 2. Addlt Offenders and Convic- TIONB.......... ..... 414
Subsection 1. Adults Convicted of Indict- able Offences. ..... 414
Subsection 2. Young Adult Offenders (16- 24 Years) Convicted of IndictableOffences421Subsection 3. Convictions for SummaryConviction Offences.... .. .....423
Subsection 4. Appeals. ..... 424
Section 4. Correctional Ingtttutionsand Training Schoole.428
Subsection 1. Statistics of Correctiodal Inatitutions and Training Schools.... .. ..... 428
Subsection 2. The Canadian Penitentiary Service ..... 429
Subsection 3. The National Parole System ..... 431
Section 5. Police Forces and Crime Statieticg. ..... 432

The interpretation of the symbols used in the tables throughout the Year Book
will be found on $p$. viii of this volume.

## Section 1.-Canadian Criminal Law and Procedure $\dagger$

The system under which justice is administered in a State is never rigid. To bave it so would be neither expedient nor indeed possible. A judicial system must grow and adapt itself to the requirements of the people, and the exact limits of the powers of different legislative bodies require continued definition.

The criminal law of Canada has as its foundation the criminal common law of England built up through the ages and consisting first of customs and usages and later expanded by principles enunciated by generations of judges. There is no statutory declaration of the introduction of English criminal law into those parts of Canada that are now the Provinces of New Brunswick, Nova Scotia and Prince Edward Island. Its introduction there depends upon a principle of the common law itself by which English law was declared to be in force in uninhabited territory discovered and planted by British subjects, except in so far as local conditions made it inapplicable. The same may be said of Newfoundland although the colony dealt with the subject in a statute of 1837 . In Quebec its reception depends upon a Royal Proclamation of 1763 and the Quebec Act of 1774. In each of the other provinces and in the Yukon and Northwest Territories the matter has been dealt with by statute.

The judicial systems of the provinces as they exist today are based upon the British North America Act of 1867 . Sect. 91 of the Act provides that "The exclusive legislative authority of the Parliament of Canada extends to the criminal law, except the constitution of courts of criminal jurisdiction but including the procedure in criminal matters". By Sect. 92 (14), the legislature of the province exclusively may make laws in relation to "the administration of justice in the province, including the constitution, maintenance and organization of provincial courts, both of civil and criminal jurisdiction and including procedure in civil matters in its courts" The Parliament of Canada may, however (Sect.

[^139]101), establish any additional courts for the better administration of the laws of Canada. It should be noted that the Statute of Westminster, 1931 effeeted important changes, particularly by abrogating the Colonial Laws Validity Act, 1865 (Br.) and confirming the right of a dominion to make laws having extraterritorial operation. Particulars of the federal judiciary are given in Chapter II, pp. 103-104, and provincial judiciaries are dealt with briefly at p. 105 .

At the time of Confederation each of the colonies affected had its own body of statutes relating to the criminal law. In 1869, in an endeavour to assimilate them into a uniform system applicable throughout Canada, Parliament passed a series of Acts, some of which dealt with offences of special kinds and others with procedure. Most notable of the latter was the Criminal Procedure Act, but other Acts provided for the speedy trial or summary trial of indictable offences, the powers and jurisdiction of justices of the peace in summary conviction matters and otherwise, and the procedure in respect of juvenile offenders.

Codification of the criminal law through a Criminal Code Bill founded on the English draft code of 1878, Stephen's Digest of Criminal Law, Burbidge's Digest of the Canadian Criminal Law, and the relevant Canadian statutes was brought about by the Minister of Justice, Sir John Thompson, in 1892. This Bill became the Criminal Code of Canada and came into force on July 1, 1893. It must be remembered, however, that the Criminal Code was not exhaustive of the criminal law. It was still necessary to refer to English law in certain matters of procedure and it was still possible to prosecute for offences at common law. Moreover, Parliament has declared offences against certain other Acts, e.g., the Narcotic Control Act, to be criminal offences and the same was done in the Defence of Canada Regulations and the Wartime Prices and Trade Board Regulations (neither now in force) promulgated under the authority of the War Measures Act.

It is often difficult to distinguish between 'law' and 'procedure' Procedure may be interpreted to relate simply to the organic working of the courts but, in a wider sense, it may also affect the rights or alter the legal relations arising out of any given state of facts. For present purposes it will be useful to note that writers on jurisprudence describe law as being substantive or adjective. "Substantive law is concerned with the eads which the administration of justice seeks; procedural (adjective) law deals with the means and instruments by which these ends are to be obtained."* With reference to the criminal law, the former may be taken to include the provisions concerning criminal responsibility, the definition of 'ofiences' and the punishment for those offences, and the latter to include provisions for enforcement, e.g., powers to search and to arrest, for the modes of trial and for the proof of facts. Broadly speaking, the Criminal Code observes the distinction although it might appear that the provisions for preventive detention of habitual criminals and dangerous sexual offenders partake of the nature of both classes.

An examination and study of the Criminal Code was authorized by Order in Council dated Feb. 3, 1949, and the Commission assigned the task of revising the Code presented its report with a draft Bill in February 1952. After coming before successive sessions of Parliament it was finally enacted on June 15, 1954 and the new Criminal Code (SC 1953-54, c. 51) came into effect on Apr. 1, 1955. Since the new Code came into force several amendments have been made, for the most part in relation to procedure. Among the most notable of these, as well in point of procedure as of substance, are: an amendment in 1956 providing that motions for leave to appeal to the Supreme Court of Canada in criminal cases should be heard by a quorum (at least five) of judges of that Court instead of a single judge; amendments effected by SC 1959, c. 41, providing a statutory extension of the definition of "obscenity" and making provision for seizure and condemnation of offending material without a charge necessarily being laid against any person; extensive amendments relating to the allowing of time for payment of fines; amendments dealing with offences committed in aircraft in flight over the high seas; an amendment forbidding the publication in a news-

[^140]paper or broadcast of a report that any admission or confession was tendered in evidence at a preliminary inquiry or a report of the nature of such admission or confession unless the accused has been discharged or, if the accused has been committed for trial, the trial has ended.

The Parole Act (SC 1958, c. 38), brought into force on Feb. 15, 1959, revises the parole system and provides for the establishment of a National Parole Board (see pp. 431-432).

It is most important to note that in 1960 (SC 1960, c. 44) Parliament enacted what is known as the Canadian Bill of Rights. Although the Act sets out further details, its general scope appears in Sect. 1, which reads as follows:-

[^141]Although the Bill of Rights has been invoked on various occasions, the courts have not held it to affect the operation of the Criminal Code.

In 1961 (SC 1960-61, ec. 43-44), the offence of murder was divided into capital and noncapital, the death penalty was abolished in relation to the offence of non-capital murder, and the term criminal sexual psychopath was dropped and the term dangerous sexual offender substituted; in 1965 (SC 1964-65, c. 53 ) provision was made for the right to appeal in habeas corpus proceedings.

## Section 2.-Adult Offenders and Convictions

Offences may be classified under two headings, "indictable offences" and "offences punishable on summary conviction" Indictable offences are grouped in two main categories: (1) offences that violate the Criminal Code and (2) offences against federal statutes. These include the graver crimes. Offences punishable on summary conviction-those not expressly made indictable-include offences against the Criminal Code, provincial statutes and municipal by-laws. It is debatable how far some summary conviction offences are of a criminal nature and whether their increase indicates an increase in crime. Many are breaches of municipal by-laws and contrary to public safety, health and comfort, as, for example, parking violations or practising trades without licence but, on the other hand, summary conviction offences may include such serious charges as assault and contributing to juvenile delinquency.

The following Subsection 1 deals with adults convicted of indictable offences, Subsection 2 with young adult offenders convicted of indictable offences, Subsection 3 with convictions for summary conviction offences and Subsection 4 with appeals.

## Subsection 1.-Adults Convicted of Indictable Offences

Statistics of indictable crimes are based on persons, so that it may be possible to evaluate the population engaged in prohibited activities and to help in the treatment of anti-social behaviour in terms of subject-centred action. In the present counting system, although individuals may be charged with more than one offence, only one offence is tabulated for each person. This offence is selected according to the following criteria
(1) if the person were tried on several charges, the offence selected is that for which proceedings were carried to the farthest stage-conviction and sentence; (2) if there were several convictions, the offence selected is that for which the heaviest punishment was awarded; (3) if the final result of proceedings on two or more charges were the same, the offence selected is the more serious one, as measured by the maximum penalty allowed by the law; (1) if a person were prosecuted for one offence and convicted of another-for example, charged with murder and convicted of manslaughter-the offence selected is the one for which the person was convicted.

In 1964 there were 46,551 adults charged with 84,546 indictable offences, of whom 42,097 were found guilty of 76,310 offences. In the previous year there were 47,616 adults charged with 86,674 indictable offences, of whom 42,914 were found guilty of 78,518 offences.

## 1.-Persons Charged and Persons Convicted of Indictable Offences, with Ratio per 100,060 Population 16 Years of Age or Over, by Province, 1963 and 1964

| Province or Territory | Persona Cbarged |  | Persons Convieted |  |  |  | Persons Convicted per 100,000 Population 16 Years of Age or Over |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1963 | 1964 | 1963 |  | 1964 |  | 1063 | 1964 |
|  | No. | No. | No. | p.c. | No. | p.c. | No. | No. |
| Newfoundland. | 902 | 859 | 872 | 96.7 | 825 | 96.0 | 322 | 296 |
| Prince Edward Island. . | 67 | 51 | 64 | 95.5 | 48 | 94.1 | 96 | 72 |
| Nova Sootia. | 1.684 | 1,656 | 1,516 | 90.0 | 1,470 | 88.8 | 316 | 304 |
| New Brunswick. | 1.315 | 1,246 | 1,283 | 97.6 | 1,199 | 90.2 | 339 | 320 |
| Quebec.. | 10,667 | 9,859 | 9.690 | 90.8 | 8,670 | 90.7 | 281 | 246 |
| Ontario... | 17,079 | 16, 122 | 14,785 | 86.6 | 14,063 | 87.2 | 348 | 324 |
| Manitobs. | 2,344 | 2,903 | 2,231 | 95.2 | 2,757 | 95.0 | 358 | 438 |
| Saskatchewan. | 1,886 | 2,210 | 1,869 | 94.1 | 2,099 | 95.0 | 314 | 348 |
| Alberta., | 4,664 | 4,860 | 4,383 | 94.0 | 4,608 | 94.8 | 498 | 514 |
| British Columbia. | 6.645 | 6,903 | 5,965 | 89.8 | 6,188 | 89.6 | 526 | 530 |
| Yukon and Nortbwest Territories.... | 263 | 182 | 256 | 97.3 | 170 | 93.4 | 1,138 | 726 |
| Canada. | 47,616 | 4, 5551 | 42,914 | 90.1 | 42,898 | 90.4 | 354 | 340 |

Table 2 classifies indictable offences by type of offence for 1963 and 1964. Class I covers offences against the person and in 1964 there were 6,009 males and 281 females convicted in this category, mostly for assaults of various kinds. Classes II to IV deal with offences against property. Thefts predominate among the offences in these classes, and breaking and entering and robbery, serious crimes which involve acts of violence, are the next most numerous. Class V deals with offences relating to currency and Class VI with miscellaneous offences; among the latter, the most numerous convictions are for offences connected with gaming, betting and lotteries. In 1964 there were 241 men and 115 women convicted under federal statutes of whom 194 men and 105 women were offenders under the Narcotic Control Act.

## 2.-Persons Charged and Convicted of Indictable Offences, by Class of Offence, 1963 and 1964

| Class of Offence | 1963 |  |  | 1984 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Persons Charged | Persons Convieted |  | Persons Charged | Persons Convicted |  |  |
|  |  | M. | F. |  | M. | F. |  |
| Criminal Code | No. | No. | No. | No. | No. | No. | p.c. |
| Class I. - Offences against the Person. <br> Abduction and kiduapping. | 7,245 50 | 5,786 31 | 24 | 7,533 67 | 6,048 52 | 281 1 | +4.4 +71.0 |
| Assault, causing bodily harm, common, on police and obstruction. | 4,854 | 3.918 | 169 | 5.178 | 4,201 | 193 | +7.0 +7.5 |
| Offences against females ${ }^{1}$............ | 1,068 | 825 | 27 | 1,000 | 748 | 19 | -10.0 |
| Causing death by criminal negligence, ${ }^{2}$ manslaughter and murder. Attempted murder, causing bodily | 244 | 142 | 9 | 206 | 131 | 6 | -9.3 |
| Attempted murder, causing bodily | 204 | 144 | 13 | 208 | 131 | 26 | - |
| Duties tending to preservation of life...................... | 24 | 21 | , | 20 | 12 |  | -42.9 |
| Other offences against the person... | 800 | 705 | 22 | 854 | 734 | 36 | +5.9 |
| Class II.-Offences against Property with Violence. | 9,265 | 8,561 | 140 | 8,578 | 8,236 | 163 | -3.5 |
| Breaking and entering a place, extortion and robbery. | 9,265 | 8.561 | 140 | 8,978 | 8,236 | 163 | -3.5 |
| Class III-Offences against Property withotht Violence. | 23,584 | 18,985 | 2,701 | 23,334 | 18,37\% | 3,666 | -1.1 |
| Fraud and [alse pretences............. | 2,943 | 2.340 | 287 | 2.849 | 2,241 | 274 | -4,3 |
| Having in possession. | 2.674 | 2,182 | 112 | 2,625 | 2,165 | 114 | -0.7 |
| Theft............... | 17,947 | 14,463 | 2,302 | 17,860 | 13,971 | 2,678 | -0.7 |
| Class IV. - Malicious Offences against Property. | 1,119 | 344 | 43 | 1,104 | 925 | 44 | -1.8 |
| Arson and otber fres............... | 157 | 118 | 16 | ${ }_{0} 131$ | 92 | 12 | -22.4 |
| Other interference with property.... | 962 | 826 | 27 | 973 | 833 | 32 | +1.4 |
| Class V.-Forgery and Other Offences Relating to Currency. | 1,304 | 1,111 | 131 | 1,315 | 1,487 | 151 | -4.3 |
| Forgery and uttering forged documents.. <br> Offences relating to currency | 1, 220 | 1,045 66 | 131 | 1,269 98 | 1.049 38 | 151 | +2.0 |
| Class VI.-Other Offences.......... | 4,683 | 2,503 | 558 | 8,841 | 3,054 | 354 | -11.9 |
| Criminal negligence in operation of motor vehicles. | 51 | 43 | - | 29 | 27 | - | -37.2 |
| Driving while ability to drive is impaired. | 686 | 616 | 12 | 422 | 347 | ${ }^{6}$ | -43.8 |
| Driving phile intoxicated............ | 27 | 26 | - | 26 | 21 | 1 | -15.4 |
| Gaming, betting and lotteries | 774 | 617 | 64 | 690 | 550 | 50 | -11.9 |
| Keeping bawdy houses.............. | 238 | 35 | 174 | 246 | ${ }_{2}^{37}$ | 183 | $\pm 3.3$ |
| Various other offences.............. | 2,847 | 2, 166 | 109 | 2,428 | 2,070 | 110 | -4.2 |
| Totals, Criminal Code. | 17,120 | 38,850 | 3,614 | 46,105 | 37,686 | 4,055 | -1.8 |
| Federal Statutes |  |  |  |  |  |  |  |
| Narcotic Control Act.................... <br> Otber statutes. | 376 120 | 191 97 | 105 17 | 376 70 | 194 | 106 9 | +1.4 -50.9 |
| Totals, Federal Statutes........ | 496 | 288 | 122 | 448 | 241 | 115 | -13.2 |
| Grand Totals. | 47,616 | 39,178 | 3,736 | 46,551 | 37,287 | 4,170 | -1.9 |

[^142]Table 3 shows that 43.3 p.c. of the persons convicted of indictable offences in 1964 had not gone beyond elementary school grades in education, 54.0 p.e. were 24 years of age or younger, 32.0 p.c. were between the ages of 25 and 44 , and 77.7 p.c. lived in urban centres. Of these offenders, 90.1 p.c. were males, 86.0 p.c. were born in Canada, 62.7 p.c. were single, 20.1 p.c. were recorded as labourers and 12.1 p.c. had no remunerative employment.
3.-Persons Convicted of Indictable Offences classified by Occupation, Marital Status, Sex, Birthplace, ete., 1963 and 1964

| Item | 1963 | 1964 | Item | 1963 | 1964 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. | No. |
| Total Persons Convicted........ | 42,914 | 42,097 | Stex |  |  |
|  |  |  | Male | 39,178 | 37.827 |
| Typi of Occupation |  |  | Femsle | 3,738 | 4,170 |
| Agriculture | 1,637 | 1.518 | Edicational Status |  |  |
| Armed Service | 315 | 300 | Unable to read or write. | 402 | 334 |
| Clerical. | 1,195 | 1,228 | Elementary. | 19.789 | 17,894 |
| Commercial and managerial | 2,591 | 2.247 | High school. | 16,637 | 16.965 |
| Construction....... | 4,552 | 4,334 | Superior.. | 501 | 615 |
| Finance... | 1108 | $\begin{array}{r}53 \\ \hline 58\end{array}$ | Grade not stated. | 747 | 935 |
| Fishing, trapping and logging. ..... | 1.537 9.080 | 1,588 | Not given....................... | 4,858 | 5,354 |
| Labourer........................ | 9.080 | 8.447 |  |  |  |
| Manufacturing and mechanical.... | 4,097 | 3, 578 | Age |  |  |
| Mining............................. | 498 | 592 | 16 to 19 years. . | 13,456 | 13.657 |
| Domestic....................... | 1.075 | 1,069 | 20 to 24 years. | 9,297 | 9.087 |
| Personal.......................... | 1,363 | 1,349 | 25 to 44 years... | 14,391 | 13.473 |
| Prolessional. | 399 | 399 | 45 years or over. | 3,878 | 3,601 |
| Public and prote | 71 | 84 | Not given........................ | 1,892 | 2,279 |
| Otber. | 135 | 129 |  |  |  |
| Student. | 3,375 | 3.895 | Birthplace |  |  |
| Transportation and coromunications. | 2,838 | 2,740 | Canada. . | 37,485 | 36.207 |
| Unemployed and retired (incl |  |  | British Isles and other Common- |  |  |
| housewives) | 4,902 | 5,075 | Wnited States | 886 316 | 797 325 |
| Not given.......................... | 3,446 | 3,177 | Europe...... | 1.929 | 1,840 |
|  |  |  | Asia. | 91 | , 72 |
| Marifal Status |  |  | Other foreign countries............ | 17 | 23 |
| Marifal itatus |  |  | Not given........................ | 2,190 | 2,883 |
| Single.. | 26,715 | 26,395 | Residence |  |  |
| Married | 11,555 | 10,769 | Residence |  |  |
| Widowed. | 442 | 443 | Urban centres. | 33,815 | 32.704 |
| Divorced. | 386 | 428 | Rural distriets................... | 7.299 | 7,311 |
| Separated........................ | 1.787 | 1,722 $\mathbf{2 , 3 4 2}$ |  | 718 | 841 |
| Not given......................... | 2.029 | 2,342 | Not given........................ | 1,082 | 1,241 |

Female Offenders.-There were 4,170 female offenders convicted of indictable offences in 1964 compared with 3,736 in 1963. Of these offenders, Ontario accounted for 1,667 , Quebec for 784 and British Columbia for 647 . The ratio of female offenders convicted to total convictions moved upward from 8.7 p.c. in 1963 to 9.9 p.c. in 1964, ranging from 5.3 p.c. in the Yukon and Northwest Territories to 11.9 p.c. in Ontario.

## 4.-Females Convicted of Indictable Offences, by Province, 1963 and 1964

| Province or Territory | Females Convicted |  | Femsles Convicted to Total Convictions |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 1963 | 1964 | 1063 | 1964 |
|  | No. |  | p.c. | p.c. |
| Newfouthland....... | 65 | 81 | 7.5 | 9.8 |
| Prince Edward Island. Nova Scotia. | 1 81 | 4 8 8 | 1.6 5.3 | 8.3 5.8 |
| New Brunswick....... | 81 70 | $\stackrel{83}{76}$ | 5.3 5.5 | 5.8 6.3 |
| Quebec... | 717 | 784 | 7.4 | 8.0 |
| Mntario.. | 1.470 | 1,667 | 9.9 | 11.9 |
| Saskatchewan | 238 | 269 | 10.7 | 9.8 |
| Altherta...... | 130 | 172 | 8.0 | 8.2 |
| British Columbia. | 387 560 | ${ }_{647}^{378}$ | 8.8 9.4 | 8.2 10.5 |
| Yukon and Northwest Territories | ${ }^{5} 17$ | 647 | 6.8 | 10.3 |
| Canada. | 3,736 | 4,170 | 8.7 | 9. ${ }^{\text {}}$ |

Multiple Convictions.-Table 5 shows the number of persons having more than one conviction at a court appearance for the years 1960 to 1964. Multiple convictions occur most often in cases of forgery and uttering, false pretences, theft, having in possession, and breaking and entering.

## 5.-Persons Convicted of More than One Offence at the Time of Trial compared with Persons Convicted of One Offence, 1960-64

| Item | 1960 | 1961 | 1962 | 1863 | 1964 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. |
| Persons Convicted of- |  |  |  |  |  |
| 2 offences. | 4.940 | 5.463 | 5,869 | 6,244 | 6,086 |
| 3 offences. | 1,804 | 2,040 | 2.046 | 2,155 | 2,094 |
| 4 offences. | 933 | 1,080 | 1.023 | 1,164 | 1,052 |
| 5 offences. | 569 | 593 | 594 | 615 | 587 |
| 6 ofiences. | 365 | 357 | 389 | 407 | 412 |
| 7 offences. | 256 | 279 | 262 | 276 | 258 |
| 8 offences. | 190 | 207 | 194 | 217 | 209 |
| 9 offences. | 155 | 146 | 140 | 170 | 151 |
| 10 offences................................................ | 109 | 125 | 118 | 123 | 121 |
| 11 to 20 offences. | 392 | 423 | 416 | 491 | 476 |
| 21 offences or over...................................... | 119 | 144 | 151 | 169 | 151 |
| Totals, Convicted of More than One Offence............ | 9,838 | 10, 857 | 11,002 | 12,031 | 11, 396 |
| Totals, Convicted of One Offence....................... | 25,505 | 27,822 | 27,061 | 30,883 | 30,501 |
| Grand Totals... | 35,443 | 28,679 | 38,663 | 42,914 | 4*,687 |

Disposition of Cases and Previous Convictions.-As shown in Table 1, p. 415, of all suspects before the courts for indictable offences in 1964, 90.4 p.c. were adjudged guilty. There was, however, considerable variation among the provinces in this respect, the proportion ranging from 87.2 p.c. in Ontario to 96.2 p.c. in New Brunswick.

Table 6 shows that of the 42,097 persons convicted in 1964, 26.2 p.c. had no previous conviction, $1-1.5$ p.c. had previously been found guilty of one offence and 33.4 p.c. had two or more earlier convictions; court records for the other 25.9 p.c. were not obtained. There is little change in these percentages from year to year.

## 6.-Persons Charged with Indictable Offences, Disposition of Cases and Previous Convictions, 1963 and 1964



Sentences, Method of Trial and Court Proceedings.-Table 7 summarizes the first court sentences given for indictable offences, Table 8 shows the method of trial and disposition of cases, and Table 9 shows persons charged and convicted of indictable crimes according to trial court.

Two kinds of sentences maintain for a certain period of time a relationship between the person dealt with by the court and the legal institutions of a community-probation and commitment to an institution. There are several types of institutions to which a person can be committed, such as penitentiaries, reformatories, gaols and industrial farms. Theoretically, every institution has a specific purpose which is supposed to be taken into account when arriving at a legal decision. In practice, however, the availability of an institution in a given community is a factor in determining the decision rendered by the court.
7.-First Court Sentences Given for Indictable Offences, by Province, 1964

| Sentence | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Atta. | B.C. | $\begin{gathered} \text { Y,T. } \\ \text { and } \\ \text { a.W.T. } \end{gathered}$ | Canads |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| Option of fine. | 257 | 11 | 414 | 343 | 1,933 | 3,481 | 605 | 433 | 1,382 | 1,286 | 29 | 10,124 |
| Gaol- |  |  |  |  |  |  |  |  |  |  |  |  |
| Under one year. <br> Ore year or over. | 190 42 | 14 | 380 14 | 354 42 | 2, 623 | 2.868 500 | 652 <br> 183 <br> 1 | 799 | 1.373 591 | 1,956 <br> 642 | 97 13 | 11,306 2,551 |
| Reformstory... | 1 | - | 4 | 6 | 77 | 1,816 | 75 | - | - | 93 | - | 2,072 |
| PenitentiaryUnder two years |  |  |  |  |  |  |  |  |  |  |  |  |
| Under two yeara. ${ }^{\text {Two }}$ years sad under five. | 33 | ${ }^{-7}$ | 202 | 17 79 | 691 | $\begin{array}{r}64 \\ 722 \\ \hline\end{array}$ | 188 | 121 | 255 | 338 | 6 | 2,642 |
| Five years and under ten.. | 2 | - | 9 | 7 | 111 | 140 | 10 | 11 | 30 | 56 | 1 | , 377 |
| Ten years and under fourteen. | - | - |  |  |  |  | 1 |  | 1 | 8 |  |  |
| Fourteen years or over.... | - | 二 | 1 | 3 | 24 | 10 | $-1$ | $-{ }^{-}$ | $-1$ | 2 | 1 | 86 39 |
| Life,......... | - | - |  | 1 | 10 | 17 |  | 2 | 2 | 1 | - | 35 |
| Preventive.. | - | - | - |  | - | 3 | 1 | 1 | 1 | 24 | - | 30 |
| Death. | - | - | - | 2 | 1 | - |  | - | 1. | 1 | - | 5 |
| Saspended sentence without probation. | 63 | 7 | 171 | 179 | 1,441 | 1,061 | 566 | 256 | 472 | 665 | 22 | 4,503 |
| Suspended sentence with probation. | 237 | 8 | 268 | 165 | 1,361 | 3,350 | 494 | 287 | 549 | 1.107 | 1 | 7,827 |
| Totsls. | 885 | 48 | 1,470 | 1,159 | 8,674 | 14,463 | 2,757 | 2,098 | 4,608 | 6,188 | 170 | 42,09\% |

8.-Method of Trial of Persons Charged with Indictable Offences, showing Disposition of Cases, by Sex and by Province, 1sf4

| Method of Trial and Sex | Nfld. | P.E.I. | N.8. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. A.Wd. N.W.T. | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| By Judge and JuryConvicted. $\qquad$ |  |  | 18 |  |  |  |  |  |  |  |  |  |
|  | ${ }^{3}$ | - | 18 |  | 117 | 284 19 | 17 1 | 32 2 | 16 2 | 126 | 4 | 662 30 |
| Aequitted.............. | 4 | - |  |  | 34 | 113 | 10 | 15. | 4 | 30 | 5 | 227 |
| Detained because of insanity................... M. |  |  |  |  |  |  |  | 1 | 2 | 8 |  | 24 |
|  | $\cdots$ | - |  | - | 5 | 4 | - | - | - | 2 | 1 | 13 |
|  |  |  |  |  |  | 1 |  |  |  |  |  | 13 |

8.-Method of Trial of Persons Charged with Indictable Offences, showing Disposition of Cases, by Sex and by Province, 1564 -concluded

| Method of Trial and Sex | NHd. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. n.f. N.W.T. | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| By Jurite and Juryconcluded |  |  |  |  |  |  |  |  |  |  |  |  |
| Disxgreenent of jury...M. | - | - |  | - |  | 3 | - | - | - |  |  |  |
| Stay of proceedings. .... M. | - | - | - | $\rightarrow$ | 1 |  |  |  | - | 15 |  | 7 |
|  | - | - | - | - | - | - | - | - | - | - | - | - |
| No Bill. | - | - | - | - | - | 34 | - | - | - | $\cdots$ | - | 34 |
|  | - | - | - | ${ }^{-}$ | - | - | - | - | - | - | - | - |
| By a Iudde without dury |  |  |  |  |  |  |  |  |  |  |  |  |
|  | $\rightarrow$ | 4 | 76 | 18 | 1,121 | 308 | 57 | 67 | 157 | 151 | 8 | 987 |
| F. | $\rightarrow$ | $\checkmark$ | 1 | - |  | 19 | 2 | 2 | 7 | 10 | - | 81 |
| Acquitted............... |  |  | 21 |  | 33.3 | 97 | 13 | 26 | 52 | 44 | - | 593 |
| Detained because of insanity ................. M . |  |  |  |  |  |  |  |  |  |  |  |  |
|  | - | - | - | - | 2 | 1 | $\rightarrow$ | - | - | 1 | - | 4 |
|  | - | - | - | $\cdots$ | - | - | - | - | $\cdots$ | $\sim$ | - | - |
| Stay of proceedings..... M . | - | - | - | - | - |  |  |  | 9 2 | 4 | - | 24 3 |
| By a Magistrate with Consent- <br> Convicted.................. F. |  | 19 | 697 | 499 | 3,387 | 7,008 | 1,066 |  |  | 2.430 |  |  |
|  | 27 | - | 27 | 22 | 158 | 467 | 67 | 1, 57 | 111 | 207 | 6. | 1.148 |
| Acquitted. $\qquad$ | 2 | - | 71 | 10 | 189 | 749 | 21 | 23 | 74 | 244 | - | 1,393 |
|  |  | - | 5 | - | 14 | 71 | 3 | t | 9 | 28 | - | 135 |
| Detained because of insadity................. M. | - | - | 4 | - | 3 | 8 | 4 | 1 | 3 | 7 | - | 30 |
|  | - | - | 1 | - | $-$ | , | - | - | , | - | - |  |
| Stay of proceedings..... M . | - | - | - | - | 1 | 1 | 29 | - | $\cdots$ | 65 | 2 | 98 |
|  |  |  |  |  | - | - | 4 | - | - | 22 | $-$ | 26 |
| By a Maxistrate, Absolute Jurisdiction- |  |  |  |  |  |  |  |  |  |  |  |  |
| Convicted.............. M. | 321 | 21 | 596 | 591 | 3,281 | 4.796 | 1.318 | 827 | 1,883 | 2,834 | 73 | 16.541 |
|  | 54 | 4 | 53 | 53 | 586 | 1.162 | 198 | 111 | 258 | 427 |  | 2.911 |
| Acquitted................ | 11 | - | 65 | 28 | 244 | 815 | 8 | 34 | 85 | 166 | 3 | 1,459 |
|  | 1 | - | 6 | 1 | 35 | 133 | - | 3 | 10 | 29. | - | 218 |
| Detained because of imsanity $\qquad$ | 1 | - | 2 | 1 | 6 | t | 1 | - | - | 2 | $\rightarrow$ | 14 |
|  |  |  | - | - | - | - | - | - | $-$ | 1 | $\cdots$ | 1 |
| Stay of proceedings..... M. | - | - | $\cdots$ | - | $\sim$ | - | 40 |  | - | 32 | - | 72 |
|  | - | - | $\sim$ | - | - | - |  | - | - | 8 |  | 15 |
| Totals, Persons Charged | 859 | 51 | 1,456 | 1,246 | 3,559 | 16,122 | 2,303 | 2,210 | 4,840 | 6,903. | 182 | 16,551 |
| Totals, Persons Convicted. | 825 | 48 | 1,470 | 1,199 | 8,970 | 14,063 | 2.857 | 2,498 | 4,648 | 6,188 | 170 | 42,997 |

9.-Persous Charged and Convicted of Indictable Ottences according to Trial Court, by
Province. 1963 and 1964

| Province or Territory and Item | 1963 |  |  |  |  | 1984 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Persons Charged and Convicted by- |  |  |  |  | Persons Charged and Convicted by- |  |  |  |  |
|  | Police <br> Magis- <br> trate <br> and <br> Munt- <br> cipa! <br> Court | Juvenile or Family Court | County Court | Higher Court | Total | Police Magistrate and Munjcipal Court | Juvenile Family Court | County Court | Higher Court | Total |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| NewfoundlandCharked. Convicted. | 839 813 | 42 42 | 1. | 20 16 | 902 872 | 791 762 | 60 60 | 1 | 7 3 | 859 825 |
| Prince Elward IslandClarged. Convicted. | 58 55 | 二 | 8 8 | 2 1 | 67 64 | 43 43 | 1 | 7 4 | - | 51 48 |
| Nova ScotiaCharged Cunvicted. | 1,572 | 8 | 64 53 | 39 28 | 1,684 1,516 | 1,523 | 4 | ${ }_{78}^{98}$ | 30 19 | 1,656 $\mathbf{1 , 4 7 0}$ |
| New BrunewickCharged Convicted................. | 1,283 | 4 4 | 110 | 17 9 | 1,315 | 1,200 1,100 | 5 | 26 | 15 | 1,246 1,199 |
| QuebecCharxed. Convicted | 7.319 6.707 | 1,723 1,718 | 1,490 | 145 123 | 10.667 9,690 | 6,271 8,787 | 1,615 1,606 | 1,531 1,171 | 142 | 9.559 8.670 |
| Optario- <br> Charged. <br> Conviczed. | 16.117 14,133 | 81 74 | 707 472 | 174 | 17,079 14,785 | 15,103 13,333 | 108 100 | 748 519 | 1183 | 16,122 14,003 |
| ManitobaClarged. Convicted | 2.006 1.916 | 258 | 34 26 | 48 34 | 2.344 | 2,338 2,227 | 429 423 | 76 59 | 60 48 | 2,903 2,767 |
| SaskatchewanCharzed Convicted. $\qquad$ | 1,828 | 2 2 2 | 106 | 50 | 1,986 1,869 | 2.053 1.991 | 5 5 | 101 68 | 51 35 | 2,210 2,099 |
| Alberta- <br> Charged. $\qquad$ <br> Convieted | 4,308 | 43 43 | 49 37 | 264 218 | 4,664 4,383 | 4,206 4,425 | 1 | 31 20 | 222 102 | 4.860 4,608 |
| Britiall ColumbiaCharzeil. Convicted. $\qquad$ | $\mathbf{5 , 4 4 0}$ 4,902 | 769 752 | 255 197 | 181 114 | 6.845 5,964 | 5,464 4,874 | 1,038 | 246 180 | 155 | 8,903 6,188 |
| Yukon and Northwest TerrituriosCharged Convicled. $\qquad$ | $\begin{gathered} 255 \\ 255 \end{gathered}$ | 二 | 2 1 | 6 3 | 263 256 | 163 | - | 8 | 114 | 188 170 |
| CanadaCharted. Convieted | $\begin{array}{r} 41,023 \\ 37,304 \end{array}$ | 2,838 | 2,718 $\mathbf{2 , 0 2 4}$ | 948 488 | 47,615 | 39,555 36,129 | 3,266 3,269 | 2,874 $\mathbf{2 , 1 2 8}$ | 856 | 48,381 48,087 |

## Subsection 2.-Young Adult Offenders (16-24 Years) Convicted of Indictable Offences

Attention has been focused in recent years on the needs of the young adult offenders of from $16-2 t$ years of age who constitute a promising field for modern reception and diagnostic facilities equipped with educational, trade training and other formative disciplines. While young men and women in this age group account for under 18.7 p.c. of the total population 16 years of age or over, they form over half the criminal population
committing indictable offences. The group includes some of the most daring offenders who already may be experienced criminals as well as first offenders likely to be turned from crime by further education and training. There were 22,744 young adult offenders in 1964, a total little changed from the previous year.
10.-Young Adult Offenders, by Age Group, Sex and Province, 1583 and 1564

11.-Young Adult Ofrenders Convicted of Indictable Offences, by Class of Offence
and Sex, 1563 and 1564

| Class of Offence | 1983 |  | 1964 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Males | Females | Males | Females |
|  | No. | No. | No. | No. |
| Criminal Code |  |  |  |  |
| Class I.-Otrences against the Person. <br> Abduction and kidnapping. <br> Assault, causing bodily harm, common, on police and obstruction. <br> Offences against females ${ }^{1}$ | 2,279 | 69 | 2,447 | 69 |
|  | 15 | - | 31 | 1 |
|  | 1,583 | 54 | 1,812 | 49 |
|  | 324 | 6 | 285 | 3 |
| Causing death by criminal negligence, ${ }^{2}$ manslaughter and murder. | 55 |  | 49 | - ${ }^{0}$ |
| Attempted murder, causing bodily harm and danger. Duties tending to preservation of life. Other offences againgt the person. | 48 | - 3 | 49 | $-{ }^{6}$ |
|  | 251 | $\cdots$ | 210 | $-10$ |
| Class H.-Offences atainst Property with Violence........ Breaking and entering a place, extortion and robbery......... | 6,074 | 9 | 5,947 | 118 |
|  | 6,074 | 94 | 5,947 | 118 |
| Class II.-Offences against Property without Violence... <br> Fraud and false pretences. | 10,485 | 1,104 | 10,367 | 1,194 |
|  | 580 | 116 | . 563 | 106 |
| Fraud and false pretences............................................................. | 1,128 | 62 | 1,184 8,620 | 1,0*0 |
| Theit... | 8,788 | 936 | 8,620 | 1,0*0 |
| Class IV.-Maficious Offences against Property Arson and other fires Other interference with property | 59157534 |  | 643 | 21 |
|  |  | 3 11 | 43 560 | 17 |

Other interference with property
For footnotes, see end of table.

## 11.-Young Adult Offenders Convicted of Indictable Offences, by Class of Offence and Sex, 1563 and 1964 -concluded

| Class of Offence | 1963 |  | 1964 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Males | Females | Males | Females |
|  | No. | No. | No. | No. |
| Criminal Code-concluded <br> Class V.-Forgery and Other Offences Relating to Currency. <br> Forgery and uttering forged documents. <br> Offences relating to currency. .. |  |  |  |  |
|  | 440 | 71 | 459 | 78 |
|  | 419 | 69 | 433 | 78 |
|  | 21 | 2 | 17 | - |
| Class V1.-Other Offences <br> Criminal negligence in operation of motor vehicles. Driving while ability to drive is impaired Driving while intoxieated. Gaming, betting and lotteries. Keeping bawdy houses Various other offences. | 1,305 | 118 | 1,197 | $15 \%$ |
|  | 25 | - 3 | 18 | - |
|  | 90 | 3 | 39 | - |
|  | $\begin{array}{r}5 \\ 19 \\ \hline\end{array}$ | - 5 |  |  |
|  | 19 | 61 | 33 5 | 92 |
|  | 1,163 | 49 | 1,102 | 64 |
| Totals, Criminal Code. | 21,189 | 1,470 | 21,011 | 1,637 |
| Federal Statutes |  |  |  |  |
| Narcotic Control Aet <br> Other statutes. | 35 11 | 47 1 | 42 | 42 1 |
| Totals, Federal Statutes. . . . . . . . . . . . . . . . . . . . . . | 48 | 48 | 53 | 43 |
| Grand T | 21,245 | 1,518 | 21,064 | 1,68\% |

${ }^{1}$ Includes abortion, indecent assault on female, sexual intercourse and attempt, incest, procuring, rape, attempted rape and seduction. $\quad 2$ Includes causing death in the operation of a motor vehicle or otherwise.
12.-Disposition of Sentences for Indictable Offences, by Sex, 1963 and 1964

| Disposition of Sentences | 1963 |  |  |  | 1964 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 16-24 Years |  | 25 Years or Over |  | 18-24 Years |  | 25 Years or Over |  |
|  | M. | F. | M. | F. | M. | F. | M. | F. |
|  | No. | No. | No. | No. | No. | No. | No. | No. |
| Sugpended sentence........ | 2,276 | 259 | 1,854 | 465 | 2,195 | 338 | 1,830 | 540 |
| Probation., | 5,669 | 490 | 1.283 | 256 | 5,787 | 491 | 1.253 | 296 |
| Fine. . . . . | 3.741 | 361 | 5.012 | 984 | 3,918 | 444 | 4,608 | 1,154 |
| Reformatory. | 6,650 1,400 | 311 80 | 7,363 545 | 411 52 | 6,398 1,417 | 310 | 6.735 546 | 414 |
| Penitentiary. | 1,496 | 17 | 1,878 | 50 | 1,348 | 26 | 1,887 | 48 |
| Desth..... | 3 | - | 8 | - | 1 | - | 4 | - |

## Subsection 3.-Convictions for Summary Conviction Offences

Ofences punishable on summary conviction are triable by magistrates and justices of the peace under Part XXIV of the Criminal Code (SC 1953-54, c. 51) or under the provincial summary conviction Acts as the case may be. Data relating to these offences are based on convictions; no information is available on either the number of persons involved in these offences or the number of charges. In these cases, following arrest or summons to appear in court, the accused person must be tried by a magistrate or justice of the peace without the intervention of a jury. Such cases are heard in police court with a minimum of delay.

## 13.-Convictions for Summary Conviction Offences, by Type, 1963 and 1964

| Type of Offence | 1963 | 1964 | Type of Offence | 1963 | 1964 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. | No. |
| Criminal Code. | 99,892 | 95,246 | Federal Statutes-concluded |  |  |
| Attempts, conspiracies, accessories, counselling. | 266 | 181 | Food and Drugs. .............. Harbour Board and Merchant | 122 | 152 |
| Attempt to commit suicide.. | 276 | 298 | Seamen's........................ | 15,188 | 15,996 |
| Bawdy house | 589 | 468 | Immigration | 23 | 125 |
| Causing disturbance by being drunk | 3,787 | 2,715 | Income Tax.................... | 5,992 | 7,152 |
| Common assault............... | 9,651 | 8,404 | Intoxication. . . . . . . . . . . . . . . . . . | 3,539 | 3,519 |
| Communicating venereal disease | 13 | 9 | Other......................... | 1,495 | 1,868 |
| Contempt of court. | 43 | 30 | Juvenile Delinquents- |  |  |
| Corrupting morals. | 381 | 425 | Adults who contribute to delin- |  |  |
| Cruelty to animals. | 80 | 104 | quency. . . . . . . . . . . . . . . . . | 1,602 | 1,722 |
| Damage not exceeding \$50 and |  |  | Incorrigibility .............. | 1,245 | 1,090 |
| erty. | 4,277 | 4,137 | etc. | 54 | 16 |
| Disorderly conduct | 16,277 | 15,842 | Sexual immorality............. | 191 | 611 |
| Duty of persons to provide neces- |  |  | Lord's Day. . . . . . . . . . . . . . . . . . | 83 | 214 |
| saries...... | 2,156 | 1,966 | National Defence................ | 101 | 97 |
| Duty to safeguard dangerous pla- |  |  | Railway........................ | 1,084 | 1,053 |
|  | 16 | 37 | Unemployment Insurance........ | 6,071 | 4,330 |
| Fraudulently obtaining food or lodging | 916 | 1,003 | Weights and Measures........... Other federal statutes........ | 114 3,526 | 146 4,508 |
| Fraudulently obtaining transportation | 149 | 1,003 | Provincial Statutes............... | 1,028,608 | 1,161,982 |
| Gaming, betting, lotteries.... | 2,954 | 2,131 | Children of Unmarried Parents.. | 637 | 680 |
| Intimidation. | 674 | 707 | Deserted Wives and Children's |  |  |
| Killing or injuring bird or animal other than cattle | 66 | 34 | Maintenance Game and Fisheries. | 6,326 7,285 | 7,270 6,950 |
| Motor Vehicle- | 66 | 34 | Highway Traffic- | 7,285 | 0,950 |
| Criminal negligence in operation. | 789 | 1,068 | Driving without care.......... Other traffic. .............. | 48,547 749,169 | 48,913 862,868 |
| Dangerous driving............... | 1,748 | 2,101 | Liquor Control- |  |  |
| Dangerous operation of vessel, |  |  | Intoxication..................... | 106,500 | 111.622 |
| etc.......................... | 189 | 163 | Other | 78,807 | 87,078 |
| Driving while impaired........ | 25,747 | 25,966 | Master and Servant............. | 1,179 | 1,208 |
| Driving while disqualified | 6,229 | 6,265 | Medical, Dentistry and Phar- |  |  |
| Driving while intoxicated. | 1,408 | 1,431 | macy | 139 | 201 |
| Failing to stop at scene of accident | 5,626 | 5,217 | Mental Diseases. Prairie and Forest Fire Preven | 1,004 | 853 |
| Motor vehicle equipped with | 5,626 | 5,217 | tion....................... | 159 | 137 |
| smoke screen................ | 47 | 44 | Protection of Children........... | 2,303 | 2,186 |
| Taking motor vehicle without |  |  | Public Health...................... | 93 | 582 |
| consent........................ | 1,717 | 1,837 | School Laws. | 633 | - 260 |
| Offensive weapons............... | 1,288 | 1,134 | Other provincial statutes........ | 25,827 | 31,174 |
| Personating peace officer......... | 1,84 | 1116 |  |  |  |
| Recognizance, breach of | 1,680 | 1,914 | Municipal By-laws . . . . . . . . . . . . . | 300,055 | 331,631 |
| Vagrancy. | 6,452 | 5,483 | Intoxicatio | 16.021 | 16,983 |
| Other Criminal Code. | 4,317 | 3,867 | Traffic. Other. | $\begin{array}{r} 232.010 \\ 52,024 \end{array}$ | 261.611 53,037 |
| Federal Statutes | 42,656 | 45,073 |  |  |  |
| Customs. | 293 | 304 | Prohibited Parking | 1,982,454 | 2,219,532 |
| Excise.... | 1,221 | 1,609 | Totals, Convictions. | 3,453,665 | 3,853,464 |
| Fisheries. | 712 |  | Totals, Convictions | 3,453,665 |  |

## Subsection 4.-Appeals

Appeal is an important safeguard in Canada's legal system and the conviction of a jury or judge may be appealed on the grounds that the verdict was unreasonable, that there was a wrong decision on some question of law or that there was a miscarriage of justice. In 1964 there were 2,536 appeals in indictable cases disposed of by the courts, of which 127 were Crown appeals and 2,409 appeals of the accused. Of the Crown appeals, 46 were from acquittal and 81 from sentence; of the appeals of the accused, 842 were from conviction and 1,567 from sentence. Appeals in summary conviction cases disposed of by the courts numbered 1,867 in 1964. Of these, 159 were appeals of the informant and 1,708 appeals of the accused. The informant appeals comprised 137 from acquittal and 22 from sentence and appeals of the accused comprised 1,471 from conviction and 237 from sentence.

## Section 3.-Juvenile Delinquents

Juvenile Delinguent, as defined in the Juvenile Delinquents Act, means any ehild who violates any provision of the Criminal Code or of any federal or provincial statute, or of any by-law or ordinance of any municipality, or who is guilty of sexual immorality or any similar form of vice, or who is liable by reason of any other act to be committed to an industrial school or juvenile reformatory under the provision of any federal or provincial statute. The commission by a child of any of these acts constitutes an offence known as a delinquency.

The upper age limit of children brought before the juvenile courts in the provinces varies. The Act defines a child as meaning any boy or girl apparently or actually under the age of 16 years, or such other age as may be directed in any province. In Prince Edward Island, Nova Scotia, New Brunswick, Ontario and Saskatchewan under 16 is the official age; in Alberta under 16 for boys and under 18 for girls; in Newfoundland under 17; in Quebec, Manitoba and British Columbia under 18 years. In the interests of uniformity, it has been the practice of the Dominion Bureau of Statistics to publish information about juvenile delinquents 16 years of age or over in the annual report on Statistics of Criminal and Other Offences and to publish data relating to those under 16 years of age in a report entitled Juvenile Delinquents. In 1964, 3,528 juveniles 16 and 17 years of age were found delinquent in those provinces where the upper age limit is under 17 or under 18 years of age.

Included in the statistics of juvenile delinquents are cases (alleged as well as adjudged) which were brought before the courts and dealt with formally. A case was counted separately each time a child appeared before the court for a new delinquency or delinquencies. In instances where multiple delinquencies were dealt with at one court appearance, only one delinquency-the most serious-was selected for tabulation. Delinquencies reported as informal cases by the courts were not included nor were cases of children presenting conduct problems which were not brought to court or which were dealt with by the police, social agencies, schools, or youth-serving agencies. Thus, community facilities for dealing with children's problems may have an influence on the number of cases referred to court and, therefore, an effect on the statistics of juvenile delinquents.
14.-Juveniles brought before the Courts. by Province, and Total Dismissed and Delinquent, 1964-64

| Province or Territory | 1960 | 1961 | 1962 | 1963 | 1964 | Percentage Change. 1963-64 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. |  |
| Newfoundland . . . . | 421 | 413 | 484 | 523 | 556 | $+8.3$ |
| Prince Edward Island. Nova Scotia | 35 | ${ }^{53}$ | 60 | 66 | 32 | $-51.5$ |
|  | 792 | 637 | 941 450 | 928 | 888 | $\pm 4.9$ |
| Quebec. . . | 2.781 | ${ }_{3.101}^{511}$ | 450 3.078 | - 472 | $\begin{array}{r}573 \\ \hline 898\end{array}$ | +21.4 |
| Ontario | 6.698 | 7,682 | 8.815 | 9,813 | 10,422 | + 6.2 |
| Manitoba. | 1.212 | ${ }^{+993}$ | 1,014 | ${ }^{2} 909$ | -976 | + 7.4 |
| Saskatchewan | 275 | 329 | 379 | 339 | 332 | -2.1 |
| Aiberta. ${ }^{\text {Britiol }}$ | 1,189 | 1,307 | 1,269 | 1.357 | 1,718 | +26.6 |
| British Columbia | 2,111 | 1,949 | 2,157 | 2,570 | 2.940 | +14.4 |
| Northwest Territories | - |  | - 50 | $\cdots$ | ${ }^{-}$ | - |
| Canada | 16,009 | 16,976 | 18,707 | 15,886 | 21,460 | + 7.9 |
| Dismissed. | 517 | 570 | 843 | 776 | 612 | -21.1 |
| Adjnurned sine die. | 1,527 | 1.191 | 1,256 | 1,554 | 1.483 | - 4.6 |
| Delinquent. | 13,965 | 15,215 | 16,608 | 17,556 | 19,365 | +10.3 |

## 15.-Percentage Change in the Number of Boys and Girls brought before the Courts, 1955-64

| Year | Percentage Change from Preceding Year |  |  | Percentage Change from 1954 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Boys' Cases | Girls' <br> Cases | $\stackrel{\text { All }}{\text { Cases }}$ | Boys' Савев | Girls' <br> Cases | $\stackrel{\text { All }}{\text { Cases }}$ |
| 1955 | +3.3 | +25.9 | $+5.6$ | +3.3 | +25,9 |  |
| 1956 | +26.9 | +19.4 | $+26.0$ | +31.1 | + 50.3 | + 33.1 |
| 1957. | $+14.9$ | $+21.0$ | +15.6 | $+50.7$ | +81.9 | + 53.9 |
| 1958. | $+10.4$ | +8.3 | $+10.1$ | + 66.8 | +97.0 | +69.4 |
| 1959. | $+2.4$ | - 5.1 | $+3.5$ | + 70.3 | + 86.9 | + 72.0 |
| 1980. | +19.4 | +26.0 | +20.1 | +103.2 | +135.5 | +106.5 |
| 1961. | +6.3 | +4.3 | +6.0 | +118.0 | +145.5 | +119.0 |
| 1962. | +10.3 | + 9.1 | $+10.2$ | +138.3 | +167.8 | +141.3 |
| 1963. | +6.2 | + 7.2 | +6.3 | +153.1 | +187.2 | +158.6 |
| 1964. | + 7.8 | + 9.2 | + 7.9 | +172.7 | +213.5 | +176.9 |

16.-Juvenite Delinquents, by Province, 1955-84

| Year | Nfid. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | $\begin{aligned} & \text { Y.T. T. } \\ & \text { N.W.T. } \end{aligned}$ | Canads |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| 1955 | 254 | 30 | 390 | 202 | 1.040 | 3,138 | 401 | 57 | 535 | 978 | - | 7,025 |
| 1956 | 336 | 48 | 412 | 311 | 1.184 | 3,945 | 593 | 44 | 715 | 1,391 | 6 | 8,985 |
| 1957. | 301 | 35 | 492 | 324 | 1,351 | 4,051 | 708 | 28 | 768 | 1,621 | 4 | 9,679 |
| 1958. | 343 | 25 | 676 | 431 | 2,2292 | 4,108 | 790 | 85 | 906 | 1,788 | 10 | 11,3911 |
| 1959. | 262 | 42 | 623 | 355 | 2,4101 | 4,199 | 629 | 182 | 811 | 2,038 | 35 | $11,686^{1}$ |
| 1960. | 409 | 35 | 682 | 460 | 2,692 | 5,364 | 1,019 | 231 | 1,031 | 2,042 | - | 13,965 |
| 1961. | 400 | 52 | 551 | 487 | 2,801 | 6,819 | 723 | 260 | 1,230 | 1,890 | 2 | 15,215 |
| 1962.... | 484 | 56 | 823 | 435 | 2,849 | 7,647 | 778 | 218 | 1,198 | 2,072 | 50 | 18,608 |
| 1963.... | 511 | 65 | 749 | 452 | 2,643 | 8,451 | 749 | 237 | 1,279 | 2,429 |  | 17,556 |
| 1964.... | $54 \pm$ | 30 | 693 | 529 | 2,779 | 9,271 | 793 | 248 | 1,635 | 2,813 | 29 | 19,385 |

${ }^{1}$ Includes 956 cases in 1958 and 35 cases in 1959 "Adjourned sine die", compiled for statistical purposes as juvenile delinquents.

## 17.-Total Delinquent Children, by Number of Belinquent Appearances, 1964, with Number of Appearances in Previous Years

| Number of Delinquent Appearances | Total Delinquent Children | Delinquent Appearances in Previous Years |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 0 | $\begin{gathered} \text { I } \\ \text { or } \\ \text { More } \end{gathered}$ | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11+ |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| 1 or more. | 17,005 | 13,921 | 3.084 | 1.623 | 646 | 321 | 171 | 74 | 72 | 47 | 25 | 17 | 24 | 64 |
| 1........... | 15,135 | 12,704 | 2,431 | 1.336 | 503 | 238 | 126 | 55 | 48 | 30 | 16 | 14 | 19 | 46 |
|  | 1,524 | 1,035 | 489 | 221 | 115 | 58 | 23 | 17 | 19 | 11 | 7 | 2 | 3 | 13 |
|  | 248 | 142 | 106 | 44 | 17 | 15 | 14 | 1 | 4 | 4 | 2 | 1 | 1 |  |
|  | 64 | 25 | 39 | 16 | 4 | 8 | 6 | 1 | 1 | 1 | $\cdots$ | - | - |  |
| 5.......... | 21 | 10 | 11 | 3 | 5 | 1 | - | - | - | 1 | - | - | 1 | - |
|  | 12 | 4 | 8 | 3 | 2 | 1 | 2 | - | $\cdots$ | - | - | - | - | - |
|  | 1 | 1 | - |  |  |  |  |  |  |  | - | - | - | - |

18.-Juvenile Delinquents, by Group of Offence, and Ratio per 1*3,000 Population خ-15 Years of Age, 1555-64

| Year | Delinquencies akainst the Person |  | Delinquencies against Property with Violence |  | Delinquencies against Property without Violence |  | Wilful and Forbidden Actsin reapect of Certain Property |  | $\begin{aligned} & \text { Forgery } \\ & \text { and } \\ & \text { Delid- } \\ & \text { quencies } \\ & \text { relating to } \\ & \text { Currency } \end{aligned}$ |  | Otber <br> Delinquencies |  | Total Convictions |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | $\begin{aligned} & \text { Ratio } \\ & \text { to } \\ & \text { Popu- } \\ & \text { lation } \end{aligned}$ | No. | Ratio Population | No. | Ratio to Population | No. | Ratio to Popu- lation | No. | Ratio to Population | No. | Ratio to Population | No. | Ratio to Popt lation |
| 1955.. | 181 | 7 | 1,548 | 61 | 2,787 | 108 | 629 | 25 | 29 | 1 | 1,871 | 73 | 7,025 | 275 |
| 1956. | 250 | ค | 1,888 | 69 | 3.572 | 131 | 839 | 31 | 39 | 1 | 2,397 | 88 | 8,985 | 329 |
| 1957. | 254 | 9 | 2,005 | 70 | 3.784 | 131 | 994 | 35 | 28 | 1 | 2.634 | 92 | 9,679 | 338 |
| 1958... | 346 | 12 | 2,268 | 76 | 4,436 | 148 | 985 | 33 | 36 | 1 | 3,320 | 111 | [1,391 | 381 |
| 1959... | 265 | 9 | 2,408 | 78 | 4,748 | 153 | 952 | 31 | 27 | - | 8,286 | 106 | 11,886 | 377 |
| 1960. | 369 | 11 | 2,953 | 92 | 5,694 | 177 | 1,272 | 40 | 36 | 1 | 3,641 | 113 | 13.965 | 434 |
| 1961... | 382 | 11 | 3,511 | 103 | 6.435 | 189 | 1,248 | 37 | 33 | 1 | 3,606 | 106 | 15,215 | 447 |
| 1962... | 460 | 13 | 3,563 | 102 | 7,129 | 204 | 1,420 | 41 | 49 | 1 | 3,987 | 114 | 16.608 | 475 |
| 1983... | 490 | 14 | 3,884 | 108 | 7,386 | 206 | t,630 | 45 | 48 | 1 | 4,138 | 115 | 17,556 | 489 |
| 1964... | 525 | 14 | 4,361 | 119 | 8,364 | 229 | 1,654 | 45 | 31 | 1 | 4,410 | 120 | 19,365 | 528 |

19.-Juvenile Delinquents classified by Type of Delinqueney, 1960-64

| Delinquency | 1960 | 1861 | 1962 | 1963 | 1964 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. |
| Manalaughter and murder and cansing death by criminal negligence. | - | 4 | 7 | 6 | 1 |
| Murder, attempt.......................................... | - | 1 | 2 | 1 | 2 |
| Rape and attempt, serual intercourse and incest. | 5 | 5 | 12 | b | 4 |
| Indecent assauit (male and female). | 96 | 70 | 127 | 101 | 134 |
| Assault, causing bodily harm and danger. | 42 | 36 | 43 | 62 | 60 |
| Common assault. | 198 | 223 | 209 | 280 | 278 |
| Interfering with transportation facilities. | - | 3 | - | - | 5 |
| Other ofiences against the person. | 28 | 40 | 60 | 34 | 41 |
| Breaking and entering a place... | 2,886 | 3,415 | 3.427 | 3,817 | 4,246 |
| Robbery and extortion..... | 5 66 | ${ }^{96}$ | ${ }^{136}$ | + 47 | 115 |
| Theft and haviog in possession. | 5,488 | B,076 | 6,787 | 7,100 | 8,004 |
| False pretences and fraud and corruption | 35 | 35 | 34 | 50 | 54 |
| Arson................ . . . . . . . . . . . . . | 91 | 74 | 94 | 80 | 106 |
| Other interference with property. | 1,181 | 1,174 | 1,326 | 1,550 | 1,548 |
| Forgery and delinquencies relating to currency | 1 36 | 133 | 1,49 | 1.48 | 51 |
| Incorrigibility and vagraney................... | 900 | 842 | 652 | 1,057 | 789 |
| Immorality. | 258 | 238 | 223 | 176 | 186 |
| Various other delinquencies. | 2,655 | 2,850 | 3,420 | 3,141 | 3,741 |
| Totals. | 13,965 | 15,215 | 16,608 | 17,558 | 19,365 |

## 20.-Percentages of Delinquent Boys and Girls, by Age Group, 1963 and 1564

| Age Group | 1963 |  |  | 1964 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Boys | Girls | Both Seres | Boys | Girls | Both Sexes |
|  | p.c. | p.c. | p.c. | p.c. | p.c. | p.e. |
| 7-12 yeara | 24.3 74.8 | ${ }_{86}^{12.3}$ | 22.9 | 24.6 | 14.4 | 23.6 |
| Not given... | 74.8 0.9 | 86.8 0.9 | 76.2 0.9 | 74.7 0.7 | 84.5 1.1 | 75.7 0.7 |
| Totals. | 100.1 | 100. | 100.0 | 100.6 | 100.0 | 100.0 |

21.-Age, Sex and School Grade of Delinquent Boys and Girls, 1964
( $\mathrm{B}=$ Boys; $\mathrm{G}=$ Girls)

| Age | School Grades |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Total Delinquents |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Elementary |  |  |  |  |  |  |  |  |  | Second. ary |  | Auxil- <br> iary |  | N at Given |  |  |  |
|  | 1-4 |  | 5 |  | 6.7 |  |  |  | 8 |  |  |  |  |  |  |  |  |  |
|  | B | G | B | G | B | G | B | G | G |  | B | G | B | G | B | G | B | G |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| 7 years. |  |  |  |  |  |  |  |  | - |  |  | - |  |  |  |  | 40 | 5 |
| ${ }_{8}^{8}$ |  | 11 | - |  |  |  | $\cdots$ | - | - |  |  | - |  |  |  | - | 203 | 11 |
| 10 " | 476 | 27 | 167 | 13 | 40 | 2 | 3 | 二 | 二 | - |  |  |  |  | 49 |  | 770 | 48 |
| 11 " | $3+3$ | 11 | 332 | 23 | 291 | 23 | 49 | 2 | 8 | - |  | - | 9 |  | 55 |  | 1,109 | 66 |
| 12 " | 23.1 | 6 | 370 | 20 | 533 | 52 | 377 | 60 | 81 | 7 | 6 | 1 | 23 | 3 | 99 | 12 | 1.723 | 161 |
| 13 " | 122 | 7 | 300 | 21 | 538 | 68 | 82 | 123 | 803 | 100 | $10 \pm$ | 29. | 24 | 2 | 198 | 32 | 2,714. | 377 |
| 14 " | 70 | 7 | 200 | 22 | 444 | 55 | 980 | 110 | 1,293 | 177 | 891 | 193 | 45 | 11. | 305 | 59 | 4. 220 | 804 |
| 15 " | 68 | 9 | 133 | 18 | 315 | 43 | 723 | 88 | 1,395 | 190 | 2,566 | 393 | 59 | 8 | 625 | 117 | 5, 884 | 80 |
| Not given |  |  | . |  |  |  |  |  |  |  |  |  |  |  | 94 | 21 | 116 | 24 |
| Totals | 1,939 | 104 1 | 1,560 | $1 \geq 1$ | 2,153 | 241 | 2,55 | 383 | 3,323 | 475 | 3,575 | 581 | 165 | 26 | 1.453 | 25? | 17,179 | 2,186 |

22.-Disposition of Delinquents, by Type of Sentence. 1955-64

| Year | Reprimanded |  | $\left\lvert\, \begin{gathered} \text { Probation } \\ \text { of } \\ \text { Court } \end{gathered}\right.$ |  | $\begin{gathered} \text { Protection } \\ \text { of } \\ \text { Parents } \end{gathered}$ |  | Fined or Mare Reatitution |  | $\begin{aligned} & \text { Detained } \\ & \text { in- } \\ & \text { definitely } \end{aligned}$ |  | Sent to Trajining School |  | Final Dispnsition Suspended |  | Corporal Punishment |  | Mental Hospital |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | o. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | No. | D.0. |
| 1955 | 181 |  |  | 43.7 | 365 |  | 1,037 | 15.1 | 50 |  | 1, 180 |  |  | 17.8 |  |  |  |  |
| 1956 | 359 | 4.0 | 3.155 | 35.1 | 404 | 4.5 | 2.015 | 22.4 | 30 | 0.3 | $1 .+40$ | 16.0 | 1.577 | 17.6 |  |  |  | 6. 1 |
| 57 | $4{ }^{1} 0$ | 4.7 | 3. 822 | 39.5 | 300 |  | 2.31 | 23.4 | 63 |  | 1,583, | 18.1 |  | 12.4 | 1 |  | 7 | 0.1 |
| 1958 | 501 | 4.4 | 5.722 | 503 | 294 | 2.6 | 1.82t | 14.3 | 13 | 0.1 | 1, 322 | 16.0 | 1,389 | 12.2 | 3 |  | 9 | 0.1 |
| 185 | 235 |  | 3,15! | 52.6 | 412 |  |  |  |  |  | 1,678 |  |  |  |  |  | 0 | 0.1 |
| 1960 | 442 |  | 7,413 | 53.1 | 518 | 3.7 | 2,289 | 16.7 | 42 | 0.3 | 1.791 | 12.8 | 1,436 | 10.4 |  |  |  | . 1 |
| 1861 | 5 H | 3.6 | 7.341 | 48.2 | 644 | 4.2 | 2.18 | 11.1 | 89 | 0.6 | 1,974 | 13.0 |  | 16.3 |  |  |  | 0.1 |
| 1952 | 697 | 4.2 | 4.827 | 53.1 | 359 | 2.2 | 2.219 | 13.4 | 89 | 0.5 | 1,862 | 11.2 |  | 15.3 |  |  | 4 | 0.1 |
| 196 | 977 | 5.6 | 3. 292 | 47.2 | 412 |  |  | $1+.0$ |  | 0.6 | 2,043 | 11.6 |  | 18.1 |  |  | 4 | 0.3 |
| 1964 | 1, 0 , 2 , |  | $9.62 \pm$ | 49.7 | 612 |  | 2,247 | 11.6 | 139 |  | 1.887 | 10.1 | 3,699 |  |  |  | 15 | 0.1 |

## Section 4.-Correctional Institutions and Training Schools

## Subsection 1.-Statistics of Correctional Institutions and Training Schools

Correctional institutions may be classified under four headings: (1) Penitentiariesoperated for adult offenders by the Federal Government in which, generally speaking, senteness of over two years are served: (2) Reformatories-operated for adult offenders by the provinces in which individual sentences of up to two years are served; (3) Common Gaols-operated for adult offenders by the provinces or counties in which sentences of up to two years can be served but in which, generally speaking, short-term sentences are served: and (4) Training Schools-operated by the provinces or private organizations under provincial charter for juvenile offenders serving indefinite terms up to the legal age for children in the particular province.

There is a limited amount of statistical information available with respect to these types of institution. "In custody" figures shown in Table 23 for penitentiaries refer only to those persons under sentence, but the figures for admissions include those received from courts as well as by transfer from other penitentiaries and by cancellation of tickets-
of-leave and paroles. Figures for releases include expiry of sentences, transfers between penitentiaries, releases on ticket-of-leave and parole, deaths, pardons and releases on court order. In custody figures for provincial and county institutions may include, in addition to those serving sentences, persons awaiting trial, on remand for sentence or psychiatric examination, awaiting appeal or deportation, any others not serving sentence and, for training school population, juveniles on placement.

Population figures in Tables 23 and 24 are for a given day of the year, which is Mar. 31 except for Quebec gaols where populations are counted as of Dec. 31. These figures represent, in effect, a yearly census of correctional institutions and. as such. are not indicative of the daily average population count. For instance, if an abuormal number of commitments is made to a certain institution on or just prior to Mar. 31 , the result will be an unrepresentative population total for the institution in that year.

With regard to the fiuctuations that might bave occurred during the year between census days, the total population of correctional institutions has shown a general increase since Mar. 31, 1959; totals for training schools and provincial adult institutions have shown a tendency to level off or decline slightly but penitentiary population has increased steadily.
23.-Population in Penitentiaries. Years Ended Mar. 31, 1960-64

| Item | 1960 | 1961 | 1962 | 1963 | 1964 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |

24.-Populations in Reformatories and Gaols and in Tralning Schools, as at Mar. 3t. t960-64

| Type of Institution | 1960 | 1961 | 1962 | 1963 | 1864 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. |
| Eeformatories and Gaols- |  |  |  |  |  |
| Reformatories for men. | 3.789 | 4,012 | 3,670 | 3.919 | 3.977 |
| Reformatories lor women | 1+4 | 180 | 171 | 171 | ${ }^{171}$ |
| Common gaols . . . . . . . | 6,983 | 7,629 | 8.225 | 8,665 | 8.411 |
| Totals, Reformatories and Gaols. | 19,896 | 11,821 | 12,066 | 12.785 | 12,559 |
| Trainind Schools- |  |  |  |  |  |
| Training actools for boyb. | 2,423 | 2.382 | 2,435 | 2.466 |  |
| Training sehools for girls. | 2.965 | 1,019 | 1.090 | 1.072 | 1,416 |
| Totals, Training Schools. | 8,388 | 3.401 | 3,525 | 3,538 | 4,078 ${ }^{\text {² }}$ |

- Eight additional training schools reported in 1864.


## Subsection 2.-The Canadian Penitentiary Service*

The Penitentiary Service operates under the Penitentiary Act (SC 1960-61, c. 53) and is under the jurisdiction of the Solicitor General of Canada. It is responsible for all federal penitentiary institutions and for the care and traiaing of persons sentenced or

[^143]committed thereto. The Commissioner of Penitentiaries, under the direction of the Solicitor General, has control and management of the Service and all matters connected therewith. In the year ended Mar. 31, 1966, the federal penitentiary system consisted of six maximum security, four medium security and fifteen minimum security institutions, all for males; one prison for women; one maximum security prison camp for males of the Freedomite Doukhobor Sect; one security institution for elderly recidivists; and three Correctional Staff Colleges.

The six maximum security institutions receive inmates sentenced by the courts to imprisonment for terms of from two years to life. These are located at New Westminster, B.C., Prince Albert, Sask., Stony Mountain, Man., Kingston, Ont., St. Vincent de Paul, Que., and Dorchester, N.B. Persons sentenced to penitentiary terms in Newfoundland are held in the provincially operated institution at St. John's, under financial arrangements authorized by Sect. 14 of the Penitentiary Act (SC 1960-61, c. 53).

The medium and minimum security institutions and the camps receive inmates transferred from the maximum security (receiving) institutions on the basis of their suitability for special forms of training, including vocational training. Of the medium security institutions, two-Collin's Bay Penitentiary and the Joyceville Institution-are within a few miles of Kingston. The other two-the Federal Training Centre and the Leclerc Institution-are close to St. Vincent de Paul.

Eight minimum security correctional camps are operated as extensions of a main institution in their respective areas. These are located at William Head and Agassiz, B.C.; Beaver Creek and Landry Crossing near Bracebridge and Petawawa, Ont.; Gatineau (Gatineau Park) and Valleyfield, Que.; Blue Mountain near Gagetown, N.B.; and Springhill, N.S. Six minimum security farm annexes operate as extensions of the penitentiaries at Dorchester, St. Vincent de Paul, Collin's Bay, Joyceville, Stony Mountain and Prince Albert, respectively. There is also a minimum security industrial satellite at St. Vincent de Paul.

The Prison for Women at Kingston, Ont., receives inmates transferred upon committal to penitentiary in any part of Canada. Before Dec. 1, 1960, it operated as a detached portion of Kingston Penitentiary.

The special security Prison Camp for Freedomites who have been sentenced to imprisonment in penitentiary is located near Agassiz, B.C., and is called Mountain Prison. When the sentences of the female Doukhobor prisoners were completed, part of Mountain Prison was converted to an institution for older recidivists.

Six new institutions were in various stages of construction during 1965-66. They are located as follows: medium security institutions at Springhill, N.S., Cowansville, Que., Warkworth, Ont., and Drumheller, Alta.; a Special Correctional Unit at St. Vincent de Paul, Que.; and an institution for Narcotic Drug Addicts at Matsqui, B.C.

The three Correctional Staff Colleges-one at Kingston, one at St. Vincent de Paul and one at New Westminster-are operated for the training of recruits and for the advanced training of penitentiary officers. The Kingston College serves English-speaking or bilingual officers, the St. Vincent de Paul College is primarily for Freach-speaking officers from all parts of Canada, and the Western Staff College trains the recruits for the institutions in the Western Region. These Staff Colleges provide excellent facilities for Service-wide conferences of institutional heads and other special groups of officers.

The Headquarters of the Service is located in Ottawa. Regional directorates have been established at New Westminster, B.C., Kingston, Ont., and St. Vincent de Paul, Que., for the Western, Ontario and Quebec areas, respectively.

## Subsection 3.-The National Parole System*

Parole is a means by which an inmate in any correctional institution in Canada, if he gives definite indication of his intention to reform, can be released from prison. The purpose of parole is the protection of society through the rehabilitation of the inmate. It is essential for the public to understand that the true purpose of punishment should be the reformation of the offender and not just vengeance or retribution but, since the Parole Board is as much concerned with the protection of society as with the reformation of the inmate, it recognizes that the welfare of an individual inmate must not be allowed to impair the success of the parole system or the public safety.

It is the function of the Parole Board to select those inmates who show some sincere intention to reform and to assist them in doing so by granting parole. The inmate then is allowed to serve the remainder of his sentence in society, but under supervision. He is subject to restrictions and conditions as to his conduct and behaviour, designed for his welfare and the protection of others. The Board is not a reviewing authority and is not concerned with the propriety of the conviction or the length of the sentence but only with the problem of deciding in each case whether or not there is chance of reformation. Parole is not a matter of clemency and is not granted on compassionate or humanitarian grounds but only if there appears to be at least a reasonable chance that the inmate will lead a lawabiding life. The treatment and training program in the institution is a vital part of the correctional process and parole is an extension of this training outside the institution. It is not a matter of pampering prisoners but of trying to give as many of them as possible a chance to rehabilitate themselves.

The National Parole Board, composed of a chairman and four members (one woman), was formed in January 1959. It operates under the authority of the Parole Act (SC 1958, c. 38) which came into force on Feb. 15, 1959, replacing the Ticket-of-Leave Act. The Board has jurisdiction over any adult inmate of any prison in Canada convicted of an offence against an Act of the Parliament of Canada; it also has jurisdiction to revoke or suspend any sentence of whipping or any order made under the Criminal Code prohibiting any person from operating a motor vehicle.

The decision of the Board with respect to any one inmate is based on reports it receives from the police, the trial judge or magistrate and from various people at the institution who deal with him. Reports are also obtained, when available, from a psychologist or psychiatrist and, if necessary, a community investigation is conducted to secure as much information as possible about his family and background, his work record and his position in the community. From these reports, an assessment is made to determine whether or not he has changed his attitude and is likely to lead a law-abiding life.

An inmate need not obtain the services of a lawyer to apply for parole. He may apply by sending a letter to the Board and is assisted in preparing such an application at the institution or another person may apply on his behalf. The Board automatically reviews all sentences of over two years. As soon as an application is received, investigation is begun and the results presented to the Board for decision. All applications and reports are processed by the Parole Board staff at Ottawa but regional officers, of whom there are 55 stationed at 16 centres across the country, interview applicants for parole in their respective areas, giving them an opportunity of making verbal representations to a representative of the Board. The regional officers submit to the Board a report of each interview with an assessment of the inmate's suitability for parole.

A person on parole is under the care of a supervisor, usually an after-care agency worker or a probation officer, who reports to the regional officer. If he violates the conditions of

[^144]his parole or commits a further offence or misbehaves in any manner, the Board may revoke his parole and return him to the institution to serve that part of his sentence outstanding at the time his parole was granted. If a parolee commits an indictable offence, his parole is automatically forfeited and he is returned to the institution to serve the unexpire $I$ balance of his sentence plus any new term to which he is sentenced for the commission of the new offence. The regional officer may also issue a Warrant of Suspension and have a parolee placed in custody if it is necessary to prevent a breach of any term or condition of the parole. These officers are thus able to exercise effective and adequate control over all parolees in their respective areas.

Duting the seven years of its operation, the Parole Board has granted parole to 14,169 inmates. Of these 1,571 were returned to prison but only 779 of them forfeited their paroles for commission of an indictable offence; the other 792 had their paroles revoked for misbehaviour or a minor offence. Thus there has been a success rate of almost 90 p.c., over the seven-year period, of men and women who have succeeded in abiding by the terms of their parole.

## Section 5.-Police Forces and Crime Statistics

Organization of Police Forces.-The police forces of Canada are organized in three groups: (1) the federal force, which is the Royal Canadian Mounted Police; (2) provincial police forces-the Provinces of Ontario and Quebec have their own provincial police forces but all other provinces engage the services of the Royal Canadian Mounted Police to perform parallel functions within their borders; and (3) municipal police forces-most urban centres of reasonable size maintain their own police force or engage the services of the provincial police, under contract, to attend to police matters. In addition, the Canadian National Railways, the Canadian Pacific Railway Company and the National Harbours Board have their own police forces.

The Royal Canadian Mounted Police.-The Royal Canadian Mounted Police is a civil force maintained by the Federal Government. It was established in 1873 as the NorthWest Mounted Police for service in what was then the North-West Territories and, in recognition of its services, was granted the use of the prefix "Royal" by King Edward VII in 1904. Its sphere of operations was expanded in 1918 to include all of Canada west of Port Arthur and Fort William and in 1920 it absorbed the Dominion Police, its headquarters was transferred from Regina to Ottawa and its title was changed to Royal Canadian Mounted Police.

The Force is under the control of the Solicitor General of Canada and is headed by a Commissioner who holds the rank and status of a Deputy Minister. Officers are commissioned by the Crown and are selected from the non-commissioned ranks. The Force has complete jurisdiction in the enforcement of the federal statutes. By arrangement between the federal and provincial governments, it enforces the provincial statutes and the Criminal Code in all provinces exclusive of Ontario and Quebec and under special agreement it polices some 122 municipalities. It is the sole police force in the Yukon and Northwest Territories, where it also performs various administrative duties on behalf of certain departments of the Federal Government. It maintains liaison officers in London and Washington and represents Canada in the International Criminal Police Organization, which has headquarters in Paris.

Of the Force's 17 divisions, 12 are actively engaged in the work of law enforcement, as are some 43 subdivisions and 638 detachments. The five remaining divisions are "Headquarters", "Depot" and " $N$ ", which are maintained as training centres, and "Marine" and
"Air", which support the operations of the land divisions. A teletype system links the widespread divisional headquarters with the administrative centre at Ottawa and a network of fixed and mobile radio units operates within the provinces. Focal point of the Force's criminal identification work is the Headquarters Identification Branch: its services, together with those of the divisional and subdivisional units and the four Crime Detection Laboratories, are available to police forces throughout Canada. The Force operates the Canadian Police College at which Force members and selected representatives of other Canadian and foreign police forces may study the latest advances in the fields of crime prevention and detection.

The uniform strength of the Force at Mar, 31, 1966 was 7,518 , including marine constables and special constables, at which time it maintained some 2,090 motor vehicles, 20 aircraft, 52 ships and boats, 300 sleigh dogs, 26 police service dogs and 240 horses.

Quebec Provincial Police Force.-The Quebec Provincial Police Force is responsible for the maintenance of peace, order and public safety in the province, and for the prevention and investigation of criminal offences and of violation of all laws of the province.

The province is divided into two almost equal parts known as the Montreal Division and the Quebec Division. The Montreal Division is divided into three subdivisions with headquarters at Granby, Hull and Montreal. The Quebec Division is also divided into three subdivisions with headquarters at Chicoutimi, Quebec and Rimouski. There are 113 detachments throughout the province-63 in the Montreal Division and 50 in the Quebec Division. The Force at the end of 1965 had 2,311 regular members-officers, non-commissioned officers and constables.

The Quebec Provincial Police Force is under the command of a Director General who is assisted by an officer holding the rank of Deputy Director General. Each Division is headed by an Assistant Director. A commissioned officer is in command of each subdivision.

Ontario Provincial Police Force.-The Ontario Provincial Police Force with a total authorized strength of over 3,900 (1966), enforces federal and provincial law in areas that do not maintain a police department and on all King's Highways. The Force is administered, from General Headquarters at Toronto, by a Commissioner who bas the rank and status of a Deputy Minister under the Attorney General. Other sentor executive officers include two Deputy Commissioners and five Assistant Commissioners. The Force has two principal divisions-Operations and Services-which are administered under the supervision of the Deputy Commissioner, Operations and Deputy Commissioner, Services, respectively. In turn, the five Divisions at the next level are administered by their respective Assistant Commissioners: Assistant Commissioner, Field; Assistant Commissioner, Traffic; Assistant Commissioner, Administration; Assistant Commissioner, Staff Services; and Assistant Commissioner, Special Services. Specialized branches under Special Services include Criminal Investigation, Liquor Law Enforcement, Precious Metals Theft, Anti-gambling, Anti-rackets, Auto Theft, and Intelligence Branches. Under Administration, the Central Records Branch offers a 24-hour, seven-day-week service to all police departments in Ontario on such matters as fingerprints records, criminal records, dry cleaning and laundry mark identification, photographic service, stolen and recovered property lists.

In addition to policing those parts of Ontario that are without municipal police forces, the Ontario Provincial Police Force is responsible for providing services to the municipal forces in specialized areas, including the investigation of serious crime and, upon request, supplies sufficient manpower to ensure proper policing within the municipalities in emergency situations.

In the field, there are 217 detachments controlled through 17 district headquarters located at Chatham, London, Burlington, Niagara Falls, Toronto, Mount Forest, Barrie, Peterborough, Belleville, Perth, Long Sault, North Bay, Sudbury, Sault Ste. Marie, South Porcupine, Port Arthur and Kenora. In addition, there are 38 municipalities policed under special contract.

The Force operates one of the largest frequency-modulation radio networks in the world, with 78 fixed radio stations and more than 950 radio-equipped mobile units, including motorcycles, marine units and aircraft. The Force also operates an interprovincial telecommunications network connecting all 17 districts as well as other police departments on a local, national and international basis. Because of territorial peculiarities, the northern districts augment their normal transportation facilities by the use of snowmobiles, swamp buggies, dog teams and a variety of rail transport facilities.

In addition to regular constable recruitment, the Force has a cadet program, making it possible for qualified young men to create for themselves a career in a long-established police force. A recent important development in the progress of this Crown Force occurred when legislative enactment provided that all ranking officers from inspector up to and including the Commissioner, receive the Queen's Commission in the same manner as the Armed Forces.

Municipal Police Forces.-Provincial legislation makes it mandatory for cities and towns to furnish adequate municipal policing for the maintenance of law and order in their communities. Also, all villages and townships or parts of townships that have a population density and a real property assessment sufficient to warrant maintenance of a police force, and have been so designated by Order in Council, are made responsible for the adequate policing of their municipalities.

Uniform Crime Reporting.-A new method of reporting police statistics (police administration, crime and traffic enforcement statistics), known as the Uniform Crime Reporting Program, was started on Jan. 1, 1962. The program was developed by the Dominion Bureau of Statistics in co-operation with the Canadian Association of Chiefs of Police Committee on Uniform Crime Reporting. Historically, the police have compiled selected statistics to meet their own needs and have been prepared to give an account of crimes in their jurisdictions. However, the definitions and methods for collecting these statistics were not uniform and the data could not be expressed with consistency on a national, provincial or local basis. With the development of the Uniform Crime Reporting Program, meaningful statistical aggregates became possible. The police were supplied with a manual of instructions containing standard definitions for the reporting of police administration, crime and traffic enforcement statistics on specially designed statistical forms to be submitted to the DBS.

Police Personnel.-As shown in Table 25, police personnel in Canada numbered 37,935 at the end of 1965 , including 32,010 sworn-in policemen, 5,551 other full-time employees serving as clerks, technicians, artisans, commissionaires, guards, special constables, etc., and 374 cadets. The ratio of police personnel per 1,000 population was 1.9 and the ratio of police was 1.6. Provincial ratios for police personnel ranged from 1.0 to 5.0 per 1,000 persons and for police only from 0.9 to 4.9. In 12 selected metropolitan areas there were 13,929 police personnel including 12,096 police and 1,833 cadets and other full-time employees. Total municipal police personnel numbered 22,112 made up of 20,975 in municipal forces, 1,045 Royal Canadian Mounted Police and 92 provincial police under municipal contracts.

There were two policemen killed by criminal action in 1965 and three lost their lives accidentally while on duty．Police transport facilities at the end of the year included 5,978 automobiles， 905 motorcycles， 584 other motor vehicles， 363 boats， 20 aircraft， 319 horses and 82 service dogs．

25．－Police Personnel，by Type of Force， 1964 and 1965

| Fores | 1964 |  |  |  | 1985 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Police | Cadets | Other Full． Time Em－ ployees | Total | Police | Cadets | Other Full－ <br> Time Em－ <br> ployees | Total |
|  | No． | No． | No． | No． | No． | No． | No． | No． |
| Royal Cauadian Mounted Police－ |  |  |  |  |  |  |  |  |
| Actual strength．．．．．．．．．．．．．．．． | 7,103 7.238 | － | 1,950 $\mathbf{1}, 987$ | 9,053 9,225 | 7,398 7,518 | － | 2,064 2,157 | 9.462 9.875 |
| Aathorized strength， | 7，238 | 二 | 1,987 401 | 9，225 | 7,518 738 | 二 | 2，157 | 9.675 1,099 |
| Retirements and other separations． | 318 | － | 254 | 572 | 432 | － | 256 | 688 |
| Ontario Provincial Police－ |  |  |  |  |  |  |  |  |
| Actual strength．． | 2，690 | 46 | 508 | 3，244 | 2，797 | 54 | 618 | 3，469 |
| Authorized strenzth | 2，690 | 46 | 508 | 3，244 | 2，797 | 54 | 658 | 3，509 |
| Engagements．．．．．．． | 402 | 36 | 162 | 599 | 260 | 30 | 230 | 520 |
| Retirements and other separations．．．．．．． | 130 | 3 | 112 | 245 | 153 | 22 | 120 | 295 |
| Quebec Provincial Police－ |  |  |  |  |  |  |  |  |
| Actual strength．． | 1，954 | － | 553 | 2，507 | 2，163 | － | 612 | 2，775 |
| Authorized strength． | 2，027 | － | 853 | 2，580 | 2，311 | － | 612 | 2.923 |
| Engagements．．．． | 331 | － | 122 | 453 | 344 | － | 155 | 499 |
| Retirements and other separations． | 125 | － | 101 | 228 | 133 | － | 96 | 229 |
| Municipal Police（excl．RCMP and OPP contracts）－ |  |  |  |  |  |  |  |  |
| Aetual strength． | 17，873 | 333 | 2，090 | 20，096 | 18，448 | 320 | 2，207 | 20，975 |
| Authorized strengt | 17.928 | 336 | 2.070 | 20，334 | 18，927 | 331 | 2，185 | 21，443 |
| Engagements．．． | 1，663 | 256 | 521 | 2，490 | 2，139 | 260 | 559 | 2，958 |
| Retirements and other separations．．．．．．． | 997 | 142 | 418 | 1，557 | 1，229 | 258 | 443 | 1，930 |
| Canadian National Railways Police－ |  |  |  |  |  |  |  |  |
| Actual strength． | 570 | － | 22 | 592 | 579 | － | 24 | 603 |
| Authorized strength． | 581 | － | 22 | 603 | 586 | － | 24 | 610 |
| Engagements．．．．．．．．．．．．．．．．．．．．．．．．．． | 86 43 | － | 5 6 | 71 49 | 59 50 | － | 3 1 | ${ }_{31}^{62}$ |
| Canadian Pacific Railway Company Police－ |  |  |  |  |  |  |  |  |
| Actual strength． | 518 | 乙 | 26 | 544 | 525 | － |  | 551 |
| Authorized strengtb | 584 | － | 26 | 560 | 540 | － | 26 | 568 |
| Engagements．．． | 97 | － | 9 | 106 | 84 | － | 4 | 88 |
| Retirements end other separations．．．．．．． | 94 | － | 6 | 100 | 77 | － | 4 | 81 |
| National Harbours Board Police－ |  |  |  |  |  |  |  |  |
| Actual strength． | 97 | － | － | 97 | 100 | － | － | 100 |
| Autborized strength． | 97 | － | － | 97 | 103 | － | － | 103 |
| Engagements．．．．．．．．．．． | 6 | － | － | 6 | 16 | － | － | 16 |
| Retirements and other separations． | 11 | － | － | 11 | 13 | － | 二 | 13 |
| Totals，All Forces－ |  |  |  |  |  |  |  |  |
| Aetual strength | 34，405 | 379 | 5，149 | 36，133 | 32，016 | 374 | 5，551 | 37，985 |
| Authorized strength． | 31，095 | 352 | 5，249： | 36，726 | 32，782 | 385 | 5，462 | 38，883 |
| Engagements | 3，151 | 292 | 1，779 | 4，713 | 3，640 | 290 | 1，312 | 5，242 |
| Retirements and other separations．．．． | 1，718 | 145 | 897 | 2，760 | 2，087 | 280 | 920 | 3，287 |

[^145]
## 26．－Police Personnel，by Sex and Type of Force， 1984 and 1965

（Actual atrength）

| Foree | Police |  | Cadets |  | Other <br> Full－Time <br> Employees |  | Totals |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | M． | F． | M． | F． | M． | F． | M． | F． |
|  | No． | No． | No． | No． | No． | No． | No． | No． |
| 1964 |  |  |  |  |  |  |  |  |
| Royal Canadian Mounted Police．．．．．．．．．．． | 7，103 | － | － | － | 705 | 1，244 | 7，809 |  |
| Ontario Provincial Police． | 2，690 | 10 | 46 |  | 242 | 256 | 2，978 | 266 |
| Quebec Provincial Police． <br> Municipal Police（excl．BCMP and OPP | ．1，944 | 10 | － | － | 334 | 219 | 2.278 | 229 |
| contracts）．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | 17，498 | 175 | 316 | 17 | 1，361 | 729 | 19，175 | 021 |
| Canadian National Railways Police．．．．．．．． | 564 | 6 | － | － | 10 | 12 | 574 | 18 |
| Canadian Pacific Railway Company Police | 518 | － | 二 | 二 | 12 | 14 | 530 | 14 |
| 1965 |  |  |  |  |  |  |  |  |
| Roysl Canadian Mounted Police．．．．．．．．．．． | 7.398 | － | － |  | 752 | 1，312 | 8，150 | 1，312 |
| Ontario Provincial Police．．．．．．．．．．．．．．．．．．．． | 2.797 | 11 | 64 | － | 298 | 320 | 3,149 | 320 |
| Quebee Provincial Police．．．．．．．．．．．．．．． | 2.152 | 11 | － | － | 343 | 269 | 2，495 | 280 |
| unjelpal Police（ercl．RCMP and OPP contracts） | 18，262 | 186 | 307 | 13 | 1，415 | 792 | 19，984 | 991 |
| Cansdisn National Railways Police．．．．．．．． | $57 \pm$ | 5 | － | － | 10 | 14 | 584 | 19 |
| Canadian Pacife Railway Company Police | 525 | － | 二 | － | 12 | 14 | 537 | 14 |
| National Harbours Board Police．．．．．．．．．．． | 100 |  |  |  |  |  | 100 |  |

Crime Statistics．－Table 27 shows the number of crimes dealt with by the police in 1965，including offences under the Criminal Code，federal statutes，provincial statutes and municipal by－laws；offences cleared by charge and otherwise；and the number of adults and juveniles charged．Offences reported or known to the police but proved unfounded are not shown in the table but numbered 43,438 ，including 36,618 under Criminal Code classifications， 1,782 under federal statutes， 3,860 under provincial statutes and 1,178 under municipal by－laws，excepting traffic．

During 1965，the police reported 53,204 offences committed against the person，in－ cluding 243 murders， 7,443 rape and other sexual offences，and 45,373 offences of wounding and other assaults（not indecent）；all offences against the person resulted in the charging of 22,933 persons， 1,405 of them juveniles．During the year there were 378,124 cases of robbery，theft and other offences against property，resulting in 74,276 persons charged， 24,658 of them juvenile males and 2,062 juvenile females； 32,401 cases of fraud，false pretences，forgery，etc．；1，864 of prostitution；2，156 gaming and betting；3，275 offensive weapons：and 151,655 other Criminal Code offences．Of the 29,614 federal statute of－ fences reported， 655 were under the Narcotic Control Act and 113 under the controlled drug part of the Food and Drugs Act；these two classifications resulted in the charging of 637 persons．

Provincial and territorial fire marshals and commissioners reported 1,600 suspected or known incendiary offences，of which 176 were proved unfounded； 399 offences were reported cleared by charge，resulting in 342 adults and 175 juveniles being charged．

The number of motor vehicles stolen was 37,419 or 558.3 per 100,000 vehicles registered； 34,325 or 91.7 p．c．of these vehicles were recovered．Police were asked to locate 17,570 missing adults and 27,313 missing juveniles； 16,970 adults and 27,124 juveniles were found．The number of drownings reported by the police was 1,359 ．

## 27.-Crime Statistics, by Type of Offence, 1964 and $\mathbf{1 9 6 5}$

| Year and Offence | Actual Offences ${ }^{1}$ | Offences Cleared |  | Persons Charged |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\underset{\text { Charges }}{\text { By }}$ | Otherwise | Adules |  | Juveniles |  |
|  |  |  |  | Male | Female | Male | Female |
|  | No. | No. | No. | No. | No. | No. | No. |
| 1964 |  |  |  |  |  |  |  |
| Criminal Code. | 646,038 | 167,487 | 68,777 | 124,675 | 12,689 | 33,868 | 2,741 |
| Capital murder. | 165 | 102 | 31 |  | 12 | 2 |  |
| Non-capital murder | 53 | 52 | $\stackrel{2}{8}$ | 47 | 6 | 1 |  |
| Atterapted murder. | 121 35 | 105 | 8 | 95 28 | 8 | 4 | 1 |
| Rape....... | 745 | 354 | 136 | 474 | 1 | 16 | - |
| Otner sexual offences | 6,887 | 2,956 | 885 | 2,627 | 31 | 380 | 17 |
| Wrounding. | 838 | 475 | 157 | 400 | 82 | 40 | 2 |
| Assaulte (not indecent) | 40.459 | 16,724 | 14,149 | 15,711 | 801 | 701 | 47 |
| Robbery. .-......... | 5,666 | 1.851 | 4228 | 2,097 | 95 | 8 387 | -99 |
| Breaking and entering | 97,224 39,930 | 19,341 9.098 | 4,299 1,938 | 12,914 8,348 | 244 163 | 8,507 4,207 | 219 38 |
| Theft over ${ }^{\text {s }}$ \% 0 . | 86,934 | 8.763 | 3,576 | 6,776 | 608 | 1.905 | 99 |
| The't $\$ 50$ or under | 170.685 | 27, 212 | 14,912 | 14,528 | 3,f04 | 9,803 | 1,277 |
| Have stolen goods | 6,011 | 5,648 | 191 | 3,633 | 275 | 822 | ${ }^{42}$ |
| Fraud. | 33,204 | 18.977 | 3,398 | 8,199 | 838 | 245 | 51 |
| Proatitution. | 2,054 | 1,884 | $3{ }^{39}$ | 647 | 1,321 | 7 | 16 |
| Gaming and betting | 2,656 | 2,143 | 230 | 2.584 | 163 | 4 | - |
| Ofienaive weapons. | - ${ }^{2,939}$ | 2,191 | 369 | 1.849 | 59 | 215 | 10 |
| Other Criminal Codel | 149.572 | 49,579 | 24,228 | 44,619 | 4,296 | 6,619 | 913 |
| Federal Statutes2. Nafentic Control Act Fond and Druge Act. | 35,168 | 28,643 | 4,351 | 19,888 | 1,238 | 1,10 | 385 |
|  | 520 | 321 |  | 297 | 171 |  |  |
|  | 103 | 37 | 40 | 26 |  |  |  |
| Provincial Statutes | 248,772 | 2\%5,974 | 8,315 | 200,541 | 16,701 | 4,976 | 1,256 |
| Munteipal By-laws | 5\%,316 | 34,208 | 8,480 | 30,050 | 2,8:88 | 1,008 | 71 |
| 1985 |  |  |  |  |  |  |  |
| Criminal Code <br> Capital murder |  | 161,757 | 73,141 | 126,450 | 12,803 | 34,284 | 3,303 |
|  |  | 1618 188 | ${ }^{25}$ | 100 | 12,815 | 31, 7 |  |
| Nun-capital murder | 64 | 58 | 3 | 43 | 11 | 4 | 1 |
| Attempted murder | 111 | 85 | 8 | 82 | 7 | 2 |  |
| Manslaughter Rape | 34 | 31 | 3 | 26 | 6 | 4 |  |
| Ot ber semal offences | 6,802 | 2,801 | 993 | 2,386 | 23 | - 34 | 31 |
| Wounding | ${ }^{8} 82$ | , 494 | 134 | -402 | 69 | 50 | 3 |
| Assautis (not indecent) | 44,551 | 18,131 | 16,671 | 17,038 | 930 | 850 | 78 |
| Robbery............ | 5,576 | 1,662 | 255 | 1,601 | 125 | 349 | 20 |
| Brenking and entering | 96,530 | 18,328 | 4,401 | 12,592 | 303 | 8.375 | 204 |
| Theft. trotor vebicl | 38.107 | 8,415 | 2,027 | 6,592 | 141 | 3,690 | 60 |
| Theft over $\$ 50$ | 67,925 | 9,045 | 3,586 | 7,094 | 753 | 1,983 | 136 |
| Theft $\$ 50 \mathrm{n}$ under | 169,986 | 28, 890 | 14,934 | 14,198 | 3, 857 | 10,2 1 | 1,642 |
| Huve atolen goods | 5,739 | 5,312 | 234 | 3,557 | 275 | 808 | 57 |
| Fraud. | 32,401 | 18.678 | 3,564 | 8.324 | 984 | 269 | 60 |
| Prostitution .... | 1,884 | 1.705 | 25 | 459 | 1,274 | 5 | 25 |
| Gaming and betting | 2.156 | 1.865 | 89 | 2,4f2 | 137 | 6 |  |
| Ofentive weapons.... | 3,275 151,655 | 2,500 | 25, 3878 | 2,140 | 82 | ${ }^{223}$ | ${ }_{98}$ |
| Federal statyNarcolic CoFood and D |  |  |  | 40,64 |  | 7,031 |  |
|  | 29,654 | 22,504 | 3,335 | 13.142 | 1,298 | 954 | 434 |
|  | 655 113 | 382 48 | 34 20 | 368 31 | 224 7 |  |  |
| Provincial Statutes | 271,857 | 250,157 | \$,588 | 221,438 | 18,975 | 7,175 | 1,01 |
| Municlpal Ey-lawst. | 58,784 | 43,357 | 8,640 | 35,694 | 3,846 | 1,75 | 147 |

${ }^{1}$ Except traffic. $\quad 2$ Except traffic, Narcotic Control Act and Food and Drugs Act.
Table 28 shows that, during 1965, police departments in Canada reported 84,726 Criminal Code traffic offences, resulting in 56,130 persons charged, 1,188 of them females. Total charges reported under federal statutes, provincial statutes and municipal by-laws
numbered $1,850,508$, excluding parking violations; the latter numbered 4,083,595, most of them reported by municipal police. The number of traffic accidents reported was 617,452 , of which 4,109 involved fatalities, 102,727 resulted in injuries, 313,446 involved property damage of over $\$ 100$ and 197,170 involved damage of $\$ 100$ or less. There were 4,869 persons killed in traffic accidents, including 3,448 drivers and passengers, 1,254 pedestrians, 143 cyclists and 24 others; persons injured numbered 149,324.
28.-Traffic Enforcement Statistics, by Type of Offence, 1964 and 1965

| Year and Ofience | Actual Offences | Offences Cleared |  | Persons Charged |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\underset{\text { Charge }}{\text { By }}$ | Otherwise | Male | Female |
|  | No. | No. | No. | No. | No. |
| 1894 |  |  |  |  |  |
| Crtminal Code......... Criminal Negligence. | 75,887 | 54,863 | 5,283 | 51,0\% | 1,056 |
| Causing death.... | 185 | 173 | 1 | 171 | 6 |
| Causing bodily harm. | 64 | 51 | 2 | 51 | - |
| Operating motor vehicle. | ${ }^{383}$ | 309 8000 | $\begin{array}{r}8 \\ \hline\end{array}$ | ${ }^{287}$ | 3 |
| Failing to stop at scene of accid | 28,685 4,065 | 8,990 3,638 | $\begin{array}{r}4.749 \\ +215 \\ \hline\end{array}$ | ${ }_{3,423}$ | ${ }_{61}^{250}$ |
| Driving while intoxicated | 3, 888 | 3,805 | 32 | 3,692 | 70 |
| Driving while impaired. | 30,924 | 30,465 | 227 | 29,622 | 809 |
| Drivint while disqualified | 7,643 | 7,432 | 49 | 6,756 | 57 |
| Federal Statutes (except parking). | * | $\cdots$ | '* | 6,066 | 1 |
| Provinclal statutes (escept parking). | . | $\cdots$ | . | 1,256,147 | 1 |
| Munielpal By-laws (ercept parking). | . | * | . | 372,951 | 1 |
| 1965 |  |  |  |  |  |
| Criminal Code. | 84,726 | 88,497 | 3,850 | 54,342 | 1,188 |
| Criminal Negligence- |  |  |  |  |  |
| Causing death....... | 197 | 190 | 2 | 187 58 | 5 4 |
| Operating motor vehicle | 357 | 250 | 2 | 314 | 2 |
| Friling to stop st scene of accident | 33,360 | 9,396 | 3,424 | 7,758 | 292 |
| Dangerous driving. . . . . . . . . . . . | 5,016 | 4,245 | 161 | 4.048 | 60 |
| Driving while intoxicated | 3.701 | 3.614 | 39 | 3,530 | 89 |
| Driving while impaired.... | 33,878 8,146 | 32,707 7,934 | 200 32 | 31,823 7.226 | 885 71 |
| Driving while disqualifed | 8,146 | 7,934 | 32 | 7,226 | 71 |
| Federal Statutes (extept parking). | - | , | $\cdots$ | 6,122 | 1 |
| Provincial Statutes (except parking) | . | '* | $\cdots$ | 1,447,809 | 1 |
| Municipal By-laws (exeept parking) | * | . | . | 397,07\% | 1 |

[^146]
# GHAPTER X.-LAND USE AND RENEWABLE RESOURGE DEVELOPMENT* 

## CONSPECTUS



The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viit of this volume.

Canada's era of settlement ended as the northern areas of the Prairie Provinces came under cultivation in the 1930s. Government policies, previously directed mainly toward the large-scale utilization of natural resources, have evolved toward concern with land use and the socio-economic circumstances of people involved in renewable resource-based industries. Undiscriminating land settlement policies and ill-advised individual choices had resulted in the settlement of some submarginal land throughout Canada but most notably in the southern areas of Alberta and Saskatchewan, creating requirement for land use adjustment even before settlement had been completed. Far more significant than this, however, is the technological revolution in agriculture which has occurred during the past three decades concurrently with improvements in transportation and a strong trend toward the concentration in urban centres of a growing population.

Accompanying these changes has been an altered pattern of land use resulting from individual response to economic factors; but the rate of such adjustment has not been concomitant to the magnitude of the socio-economic dislocation in rural areas. Because of this situation, and because of increased concern with forest management, water pollution control, recreational resources and wildlife management, the trend has been for a vast increase in public decision-making with respect to resource management and use. Implicit in this has been the need for improved legislative-administrative organization relative to natural resources.

One of the most important responses to this need was the "Resources for Tomorrow" Conference held in 1961 to permit examination of problems of resource use and of developing an organizational framework suited to the modern requirement for integrated, comprehensive resource-use planning for social and economic development. Subsequent to this Conference, the Canadian Council of Resource Ministers, composed of one representative from each province and one from the Federal Government, was established to perform a similar function on a continuing basis, with the aid of a Montreal-based staff. Significant among the various activities of the Council has been the planning of a further major conference on "Pollution and Our Environment", for the autumn of 1966. Earlier federal investigations of significance to the general problem of organization for resource use were: the Senate of Canada Special Committee on Land Use, established in 1957 and continuing until 1963; the House of Commons Standing Committee on Mines, Forests and

[^147]Waters; and the National Conference on Reconstruction, held in 1945. Notable among several provincial government activities along similar lines is the annual British Columbia resources conference.

Constitutionally, administration and disposition of natural resources rests mainly with the provincial governments. Under the British North America Act, fisheries were under federal jurisdiction and the federal and provincial governments shared legislative authority with respect to agriculture, international and interprovincial watere, etc., with federal legislation taking precedence over provincial legislation should conflict arise; however, subsequent interpretations of the Act have established most aspects of control of resources as being matters of provincial jurisdiction. As well, in the years following Confederation certain provinces, by agreement, assumed varying degrees of responsibility for administering the fisheries legislation and other federal resources legislation. Within this general framework, the Federal Government has taken certain steps to establish a national resources policy, to co-ordinate the activity of the various federal departments concerned with resources and relevant social and economic problems, to undertake or share in research, and to provide initiative and financial assistance in the establishment of programs of resource adjustment and development; and provincial governments have moved significantly to accommodate their administrative structures to the need for integrated, planned resource adjustment and development. Aspects of this trend to accommodate legislative-administrative organization to emerging needs will be apparent in the following descriptions of federal and federal-provincial agencies and programs. In addition, a great number of provincial programs have been instituted or strengthened, furthering the trend toward integration of activities relative to renewable natural resources.

Federal activity in resource conservation programs began before the turn of the century, starting in 1877. This included the work of the now long-disbanded Department of the Interior in the Geld of surveying and development of water resources in Western Canada. Later programs included those conducted under the Prairie Farm Rehabilitation Act which was enacted in 1935 to aid in the rehabilitation of drought-stricken areas of the prairies, the work on the eastern seaboard conducted under the Maritime Marshland Rehabilitation Act of 1918 , water development projects under the terms of the Canada Water Conservation Assistance Act of 1953, the broad and comprehensive resource development and adjustment program being undertaken under the terms of the Agricultural Rehabilitation and Development Act of 1961, and projects under the Atlantic Development Board Act of 1962. There have been numerous programs under the International Boundary Waters Treaty Act of 1911 by the International Joint Commission established to fulfil the provisions of the treaty and the confirming Act. Over this period many projects of varying nature and scope have been undertaken under legislation such as the above and under the terms of reference of the federal and provincial government departments and agencies conceroed with resource development-all toward the basic objective of achieving more effective utilization of Canada's land and water resources and the provision of a greater degree of economic stability and equitability for the rural areas of the country.

## Section 1.-Land Resources

Information available regarding Canada's land resources is shown in Table 1, where the land area is classified as occupied agricultural. forest and "other" land, the last including urban land, road allowances, grass and brush land and all waste land such as open musteg, swamp and rock. The Department of Forestry and Rural Development estimates that about 48 p.c. of the land area of Canada is forested and, according to the Census of 1961, less than 8 p.e. is classed as occupied farm land. A great part of the $1,606,788 \mathrm{sq}$. miles of "other" land is located in the Yukon and Northwest Territories which together have a land area of $1,458,78+s q$. miles. The occupied farm land in these Territories is practically nil and the forest area is estimated at $275,800 \mathrm{sq}$. miles.
1.-Lind Area classified as Ocenpled Agricuitural or Forest, by Province

Nort-Figures for ocoupied agricultural tand were obtained from the 1961 Census; areas of foreat land were compiled by the Department of Foreatry and Rural Development from estimates supplied by the Forestry Service in each province.

| Description | New-foundland | Prince <br> Edward Island | Nova Scotia | New Brunswick | Quebes | Ontario | Manitoba | Saskatchewan | Alberta | British Columbia | $\begin{aligned} & \text { Y.T. } \\ & \text { N.W.T. } \end{aligned}$ | Canads |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | aq. miles | 8q. miles | sq. miles | sq. milea | sq. miles | sq. miles | 8q. milen | sq. milee | Aq. miles | sq. miles | sq. miles | sq. miles |
| Oceupled Agricultural Land-Improved-Crops and summer fallow | 21 | 615 | \$18 | 763 | 8,218 | 12,868 | 17,061 | 64, 223 | 36,038 | 1.360 | 1 | 141,686 |
| Pasture.................... | B | 263 | 199 | 812 | 3,614 | 6,149 | 1.125 | 2,179 | 3,810 | +564 | 1 | 16,012 |
| Other................... | 6 | 28 | 60 | 72 | 458 | 785 | 50 t | 970 | 885 | 121 | 1 | 3,870 |
| Unimproved-Forest (wondland) $\ldots \ldots \ldots$ | 31 | 483 | 2,130 | 1,923 | 7,033 | 5.090 | 2.329 | 3,430 | 3,341 | 1,177 | 2 | 26,949 |
| Other.................... | 22 | 131 | 678 | ${ }^{1} 367$ | 2,864 | 5. 137 | 7,388 | 29.848 | 30,843 | 3.828 | 9 | 81,004 |
| Totals, Oceupied Agricultural Land | 85 | 1.504 | 3,485 | 3,437 | 22.185 | 29.829 | 28.391 | 14*,650 | 78.755 | 7,041 | 13 | 256,511 |
| Ferest Land- |  |  |  |  |  |  |  |  |  |  |  |  |
| Soltwood- Merchantable............ | 24,422 | 78 | 7,270 | 6,297 | 75,687 | 44,110 | 14.669 | 14,621 | 14.483 | 80,330 | 85.200 | 317,167 |
| Young growth........... | 5,835 | 396 | 789 | 2,889 | 40,922 | 35,825 | 20,366 | 3,413 | 14,042 | 87,786 | 10,000 | 222363 |
| Mixedwood-Merchantable. | 403 | 133 | 5,250 | 7,298 | 47.510 | 24,533 | 5, 459 | 12,736 | 12.636 | - | 19,800 | 135,748 |
| Young growth. | 269 | 145 | 458 | 2.042 | 26.281 | 34.289 | 6.614 | 5.046 | 11.308 | - | 3.500 | 89, 852 |
| Hardwood- Merchantable. | 9 | 13 | 841 | 1.939 | 14.391 | 6,559 | 8.403 | 9,528 | 5,255 | 3.945 | 4.700 | 50,583 |
| Young growth | 244 | 11 | 45 | . 952 | 14,344 | 17,961 | 4,767 | 1,773 | 13,728 | 7.953 | 2,500 | 64,278 |
| Unclasgified ${ }^{3}$.. | 2,680 | 37 | 427 | 2,470 | 1,500 | 1. 191 | 3.011 | 3.122 | 45,120 | 28,397 |  | 87,955 |
| Totals, Productive Forest Land. | 33.862 | 813 | 15.080 | 23,887 | 220.625 | 164. 568 | 68, 189 | 50.239 | 116.572 | 208, 411 | 75.700 | 967,946 |
| Nou-productive Forest Land 4 | 53,938 | 121 | 1,194 | 442 | 187.500 | 07.174 | 84.632 | 67.499 | 41,023 | 59.227 | 200,100 | 742,842 |
| Totals, Forest Land. | 87.792 | 534 | 16.274 | 24,389 | 378.125 | 261.742 | 122.821 | 117.738 | 187, 595 | 267. 638 | 275,800 | 1,710,788 |
| Net Productive Lands. | 38.916 | 1,85\% | 16. 135 | 28.401 | 235.777 | 188.507 | 84.251 | 147, 459 | 18\%, 026 | 214.375 | 75.711 | 1.210,648 |
| Other Lande. | 55.198 | 213 | 2.778 | 1.998 | 130,583 | 58, 111 | \$2.882 | 5, 2\%4 | 29.751 | 35.777 | 1.182.973 | 1.606.788 |
| Totals, Land Area\%. | 143,445 | 2.184 | 20.402 | 27.385 | 533, 860 | 344.092 | 211,775 | 220,182 | 248,800 | 358.279 | 1.458.784 | \$, 560, 238 |

[^148]${ }^{2}$ Included in Forest Land; duplication eliminated in the item Net Productive Land.
a Includes areas of recent burn, cut-over or windiafl not yet re-storked. $\quad$ Areas incapable of producine crops of merchantable timber because of adverse climstic, soil or moisture conditions, and reserve forest lands for which no inventories are available. "Includes only occupied agricultura) land (lesse forest mon, Hland) plus productiv e torest land. land such as urban land, road altowances, grass and brush Jand and all waste land such as open muskeg, swamp and rock and also unclassified land. Comprises all other Land plus Non-productive Forest Land plus Oither Land.

On the basis of information currently available, it is estimated that, in addition to the present arable land across the country, about $40,000,000$ acres of virgin land can be used for arable crops if the need arises. However, most of these reserves will require clearing or other improvement measures before they can be used for agriculture. In addition to the present arable land and potentially arable land, $55,000,000$ to $60,000,000$ acres are suitable for wild pasture.

As the Canada Land Inventory progresses (see p. 447), a great deal of detailed information is becoming available on the land resources of the country, their present utilization and their capability.

## Section 2.-Federal Agencies Concerned With Resource Use

Numerous agencies of the Federal Government have a more or less direct concern with renewable resources. Functions vary from academic research to direct manipulation of resources in certain geographical areas. Direct action, however, is limited mainly to areas under federal jurisdiction-the Northwest Territories, Indian reservations, limited federal forest preserves, National Parks, certain international parks and waterways, certain aspects of fisheries and matters relative to public health. More usual by far than direct action by the Federal Government are federal-provincial agreements under which the Federal Government shares the costs of programs. Such aid is often conditional on the province agreeing to carry out the program in accordance with criteria established by the Federal Government. The capacity of the Federal Government to establish cost-sharing programs is inherent in its broad fiscal powers and in its research and data-gathering programs that provide a basis for broader assessment of issues and alternatives.

Federal agencies whose activities impinge fairly directly on renewable resource development and use are as follows:-

Canada Department of Agriculiture--Pesearch Branch, Economics Branch, Prairie Farm Rebabilitation Administration, and Information Division
Department of Fisheries-Conservation and Protection Service, Resource Development Service, Information and Consumer Service, and Economics Service
Department of Forestry and Rutal Deyelopment-Directorate of Program Co-ordination, Information and Technical Services Division, Forest Products Research Laboratory, ARDA Administration, Maritime Marshlands Rehabilitation Administration, and Eastern Rockies Forest Conservation Board
Department of Indian Affairs and Nurthern Development-Council of the Northwest Territories, Natural and Historic Resources Branch (including the Canadian Wildife Service), Northern Administration Branch, and Indian Affairs Branch
Department of Public Works-Harbours and Rivers Engineering Branch, Development Engineering Branch and Economic Studies Branch
Department of Transport-Marine Works Branch, Marine Hydraulics Branch, and Meteorological Branch
Department of National Health and Welfare-Occupational Health Division, and Public Health Engineering Division
Department of Finance-Economic Analysis and Government Finance Division, Resources and Development Division, and a Division concerned with Taxation, Federal-Provincial Relations and Pensions and Social Insurance
Department of Veterans Apfatrs-Veterans' Land Administration
Drfartment of Energy, Mines and Resources-currently being organized into four Groups concerned with research, water management, energy development and mineral development, which will include agencies under the former Department of Mines and Technical Surveys, i.e., Surveys and Mapping Branch, Geological Survey of Canada Branch, Geographical Branch, Marine Sciences Branch, and will also include water and resources agencies translerred from the former Department of Northern Affairs and National Resources
National Researce Council of Canada
National Energy Board
Economic Council or Canada
Atlantic Development Board.

Various Crown corporations, credit agencies, advisory committees and boards, and quasi-governmental organizations also have interests in the fields of resource development, including:-

Farm Credit Corporation
Canadian Commttiee on Freshwater Fisheries Researce
Fishertes Regsarce Board of Canada
Northern Canada Power Commission
Aditoory Commitiee on Northern Development
Advisory Commttree on Water Use Poucy
Central Mortgage and Hodeing Corporation
National Harbours Board
St. La wrence Sraway Authority
Muntctal Development Loan Board
Norteern Trangportation Company
Interdepartmental adyisory Committee on Forestry Statigtics
Intrrdepartmental Co-ordinating Committee for ARDA
National Commttee for the Internatlonal Hydrologic Decade.
The Dominion Bureau of Statistics has, of course, functions relevant to nearly all aspects of the national life, including resources. The above agencies are not identified with a particular department function more or less autonomously but are usually associated with a Minister of the Crown for purposes of reporting to Parliament (see pp. 142-150). Although each of these agencies carries out programs bearing on the use and development of natural resources, direct unilateral action is unusual except relative to lands and waters under the jurisdiction of the Federal Government. Major exceptions are the Prairie Farm Rehabilitation Administration programs and significant federal programs for the conservation and development of the various fisheries resources.

Major items of federal Iegislation relative to renewable resources include:-
The Department of Agriculture Act
The Prairie Farm Rehabilitation Act
The Farm Credit Act
The Department of Fisheries Act
The Forestry Development and Research Act
The Agricultural and Rural Development Act
The Department of Northern Affairs and National Resources Act
The National Parks Act
The Migratory Birds Convention Act
The International River Improvements Act
The Dominion Water Power Act
The Canada Water Conservation Assistance Act
The Atlantic Provinces Power Development Act
The Navigable Waters Protection Act
The Veterans' Land Act
The Economie Council of Canada Act
The National Energy Board Act
The National Harbours Board Act
The St. Lawrence Seaway Authority Act
The Municipal Development and Loan Act.

## Section 3.-International Boards and Commissions

The continental context of Canadian resource management is implicit in the purposes of the various international boards and commissions in which Canada participates. Of the 35 or more, some 25 are concerned with water; most of the remainder have to do with fisheries.

The International Joint Commission was established to fulfil the provisions of the International Boundary Waters Treaty of 1909 between the United States, Great Britain and Canada. Three commissioners were appointed by the President of the United States
and three by the Government of Canada. The Commission deals with the use, obstruction and diversion of boundary waters and rivers crossing the International Boundary. It conducts investigations on water use problems with international implications and reports its findinge with recommendations to both governments.

International boards of control which report to the International Joint Commission are: a ten-member International St. Lawrence Board of Control, concerned with levels of Lake Ontario and the regulation of outflow from the lake; a two-member St. Croix Board, concerned with water levels and supervision of dam construction; the Lake of the Woods Board, the Lake Superior Buard, the Rainy Lake Board and the Kootenay Board, all of which are concerned with water levels; a two-member Columbia River Board, concerned with the effects of the Grand Coulee dam; a four-member Souris River Board, concerned with allocation of water; and a Give-member Niagara Board, concerned with levels of Grass Island Pool and the Lake Erie ice boom. Functions similar to those of the Buards are carried out by two accredited officers relative to measurement and apportionment of waters of the St. Mary and Milk Rivers. Also reporting to the International Joint Commission are five international engineering boards for the St. John, St. Croix, Souris and Red, Pembina and Columbia Rivers. A seven-member Technical Advisory Board on Air Pollution is concerned with air pollution by ships plying the Detroit River. An Advisory Board on Control of Pollution of Boundary Waters, reporting to the International Joint Commission, is concerned with the connecting channels of the Great Lakes, and other boards concerned with pollution are: the Advisory Board on Pollution Control-St. Croix River, the International Red River Pollution Board, the International Lake Erie Water Pollution Board and the International Lake Ontario-St. Lawrence Water Pollution Board. The eight-member International Great Lakes Levels Board is concerned with investigation and study of water levels of international or boundary waters, reporting to the International Joint Commission.

The International North Pacific Fisheries Commission, composed of four members each from Canada, the United States and Japan, operates to fulfil the terms of the International Convention for the High Seas Fisheries of the North Pacific Ocean, the objective of which is to achieve maximum sustained yield in non-territorial waters by co-ordination of the studies necessary to determine appropriate application of treaty principles. The Great Lakes Fisheries Commission, composed of two national sections of three members each, formulates and co-ordinates research programs and recommends programs for the eradication or control of sea lamprey populations. Responsibility for Canadas treaty obligations is shared by arrangement between the Federal Government and the Government of Ontario. The Northwest Atlantic Fisheries Commission operates under the International Convention for the Northwest Atlantic Fisheries signed by Canada, the United States, the United Kingdom, France, Spain, Denmark, Portugal, Iceland, Norway, Italy, East Germany and the U.S.S.R. All contracting governments are represented on the Commission and panels have been established with jurisdiction over defined areas of particular interest to some signatories. The Commission has no regulatory powers but conducts scientific investigations and recommends measures to maintain stocks of fish. The North Pacific Fur Seals Commission operates under the Interim Convention on Conservation of North Pacific Fur Seals signed by Canada, the United States, Japan and the U.S.S.R., undertaking research, recommending enforcement measures required to eliminate pelagic sealing on the high seas, and overseeing the apportionment of skins from the Pribilof, Commander and Robben Islands. The International Whaling Commission, composed of representatives of Australia, Brazil, Argentina, France, South Africa, the United States, the United Kingdom, Canada, Norway, New Zealand, Iceland, Japan, Panama, Mexico and Denmark, has power to amend whaling rules and regulations of the International Convention, and to recommend new regulations with respect to the conservation and use of the resource. The Roosevelt-Campobello International Park Commission is concerned with the administration and development of the Campobello Island estate of the late Franklin D. Roosevelt as an international park.

## Section 4.-Federal and Federal-Provincial Resource Development Programs

## Water Development

Since 1935, the Prairie Farm Rehabilitation Administration (PFRA) has provided engineering and financial assistance in respect of some 91,000 small dams and dugouts (small artificial ponds for water collection) to supply water for ljvestock, irrigation and domestic use. In the main, such works serve individual farmers but some serve groups of farmers or communities. The PFRA provides engineering services and usually pays about 50 p.c. of the construction costs, for a total cost of nearly $\$ 24,650,000$.

Six minor irrigation projects in Saskatchewan and one larger one in Alberta provide water for 160,000 acres of land, with benefits to about 1,000 farmers. Major irrigation projects include the St. Mary Irrigation Project, jointly undertaken by the Federal Government and the Government of Alberta in 19+6. The St. Mary Dam, completed in 1951, impounds water from the Belly and Waterton Rivers, providing sufficient water to irrigate approximately half a million acres. The South Saskatchewan River Development Project now under construction involves building of a main dam 210 feet high and 16,700 feet longthe largest rolled earth dam in Canada and one of the largest in the world. Located between the towns of Outlook and Elbow, this dam will create a reservoir 140 miles long with a total capacity of $8,000,000$ acre feet of water (usable storage of $2,700,000$ acre feet). The project will provide water to irrigate 500,000 acres of land, the power potential is 475,000 kilowatts, and the artificial lake will have considerable recreational potential. A second. smaller dam adjacent to the height of land between the South Saskatchewan and Qu Appelle Rivers will divert water into the Qu'Appelle-Assiniboine system to provide much-needed water supplies for irrigation and the considerable urban areas of the watershed. The cost of developing the main reservoir is $\$ 100,000,000$, of which the provincial government is contributing $\$ 25,000,000$ By the spring of 1966 , construction of the two dams was nearly completed and Federal Government expenditures amounted to $\$ 101,000,000$ for construction costs alone.

Land reclamation projects have been carried out by the PFRA in Manitoba along the Assiniboine River between Portage la Prairie and Headingly, at various points in the Interlake Region, and along the Northwest Escarpment. The Assiniboine River project includes creation of a large reservoir near Shellmouth and construction of a diversion canal near Portage la Prairie to carry floodwaters to Lake Manitoba. Construction of the main dam began in 1964.

Smaller irrigation and water-supply projects assisted by PFRA number 4,989; most of them serve individual farmers but a number serve adjacent farms or small communities and 60 of them provide substantial water supplies for various uses. Since the inception of the program, some $\$ 8,213,000$ has been spent by PFRA on such projects.

Under the provisions of the Atlantic Development Board Act of 1962, amended in 1963, a $\$ 100,000,000$ Atlantic Development Fund was established to support projects which would contribute to the growth and development of the economy of the Atlantic region. Among the projects initiated during the Board's first three years of operation were a number relative to water use for power production and for industry, the most notable being a $\$ 20,000,000$ grant toward the $\$ 113,000,000,600,000$-kilowatt Mactaquac dam in New Brunswick and a similar grant toward Newfoundland's $\$ 60,000,000,224,000$-kilowatt Bay d'Espoir hydro-electric project. The Board also assisted in developing water supplies to meet the needs of industries-mainly fish-packing plants-in some 30 communities, and committed $\$ 2,000,000$ toward abatement of industrial pollution in inland waters of the region.

The program under the Agricultural Rehabilitation and Development Act (ARDA) included, during the first three years of the program to Mar. 31, 1965, some 207 soil and water conservation projects for which the Federal Government shared the costs to the extent of $\$ 12,394,000$; the projects consist mainly of drainage and dyking of potentially arable land.

Under the Water Conservation Assistance Act of 1953, which enables federal participation up to $37 \frac{1}{2}$ p.c. of the cost of dams and other major water projects, three water conservation programs have been initiated in Ontario-the Ausable River, Upper Thames and Metropolitan Toronto and Region. The over-all cost is estimated at $\$ 34,500,000$, of which the Federal Government is committed to pay $\$ 13,000,000$.

Other federal agencies and programs (federal and federal-provincial) concerned with water are: the Fraser River Board, which carries out research in co-operation with British Columbia on flood control, hydro-power development and the like; the Prairie Provinces Water Board, comprised of one member from each of the Prairie Provinces and two from the Federal Goveroment to recommend on allocation of water from interprovincial stream; the Nelson River Investigation, established in 1963 to study power sites on the river and make recommendations for their development; the Nelson River Programming Board and Administrative Committee; the Greater Winnipeg Floodway Program to construct a floodway past Winnipeg at a total cost of $\$ 63,000,000$ of which the Federal Government will contribute $\$ 37,000,000$; the Ottawa River Engineering Board, a joint Ontario, Quebec and federal organization for hydrologic study of the river; and a considerable number of varied hydrologic and water quality studies conducted by the Department of Fisheries, the Canada Department of Agriculture, the Department of National Health and Welfare, the National Research Council, the Department of Transport, the Department of Energy, Mines and Resources, the Department of Forestry and Rural Development and several other agencies.

## Lands, Forests and Wildlife

The Prairie Farm Rehabilitation Act of 1935 provided for rehabilitation of areas subject to drought and wind erosion in the Prairie Provinces and in 1937 was amended to broaden its scope to include land utilization and resettlement. In the main, the PFRA's land use programs have involved the establishment of community pastures on land submarginal for cereal crop production, and over the years this program has resulted in the establishment of 84 community pastures with a total acreage of $2,325,000$ at a total cost of $\$ 9,274,000$. The PFRA also operates tree nurseries at Indian Head and Sutberland in Saskatchewan, which distributed more than $10,000,000$ trees to farmers during 1965-66.

The Agricultural Rehabilitation and Development Act, proclaimed in 1961, arose out of recognition of a national interest in achieving better land use, improving the viability of farm units at present uneconomic, and of improving employment and income opportunities in rural areas. In many areas of Canada, income is unacceptably low and land use faulty or inefficient. To some considerable degree these economic, social and conservation problems have been caused by farm mechanization which places smaller, less-mechanized farmers at a disadvantage; a notable symptom of this is the decrease in the number of farms in Canada from about three quarters of a million in 1931 to less than half a million at present-a trend that is continuing.

The Act, amended in 1966 as the Agricultural and Rural Development Act and supplemented by the Fund for Rural Development Act of 1966, is enabling legislation intended to be complementary and supplementary to existing federal and provincial legislation in respect of renewable resources and rural social and economic development; to aid in correlation and expansion of existing programs; and to fill gaps. As such it has considerable potential as an instrument for programs of alternate land use, soil and water conservation, development of rural income and employment opportunities, and for research. ARDA is a federal-provincial program which operated from its inception to Mar. 31, 1965 under a federal-provincial Geveral Agreement, and after that time under the Rural Development Agreement covering the period 1965-70. Under the General Agreement, ARDA-approved projects involving a federal share totalling $\$ 34,517,000$, of which $\$ 13,484,000$ was expended during the period. The federal share is usually in the order of 50 p.c. of total cost. The Rural Development Agreement provides for the expenditure of $\$ 175,000,000$ during the

1965-70 period, $\$ 50,000,000$ of which may be used to finance major projects in special rural development areas. During 1965-66, the Federal Government had committed $\$ 18,427,000$ to 332 projects.

The Canada Land Inventory being co-ordinated by the ARDA Administration has been made possible by extensive soil classification work in Canada over the past halfcentury. The co-operative Soil Surveys, which have been under way since 1935, are staffed by soil specialists of federal and provincial governments and universities and are supported by all senior governments. The Soil Surveys have mapped most of the agricultural land of Canada, classifying soils according to their inherent characteristies. The Geographical Branch of the now Department of Energy, Mines and Resources has conducted a second type of land classification according to present use, and various agencies, both federal and provincial, have provided information on the social and economic factors of land use. The Canada Land Inventory carries out a third type of land classification-according to its assessed capability for different uses, i.e., agriculture, forestry, recreation and wildlife, in and adjacent to the settled portions of Canada. Lands are being classified according to physical capability, present use, and socio-economic factors relative to their present use. The vast amount of information obtained will be stored on computer tapes, analysed and published in map or other form in such a way that the Inventory will become a working tool in resource use and rural development programs tbroughout Canada. Approximately 100 agencies of the 11 senior governments are involved in the Inventory, as well as numerous universities, non-government organizations and private companies or individuals, By late 1966, the agriculture and forestry phases of the Inventory had been nearly completed and substantial progress had been achieved in the wildlife and recreation phases.

In addition, other federal agencies and federal and federal-provincial programs are concerned with land and land-based resources. The Department of Indian Affairs and Northern Development engages in such diverse activities as the administration of National Parks, the administration of the resources of the Yukon and Northwest Territories and the administration of wildlife, including a considerable research program relative to wildlife and the administration of the Migratory Birds Convention Act. Among the programs are the Wildlife Inventory Program in which joint studies are carried out informally, e.g., the waterfowl inventory conducted by the Federal Government, the United States Fish and Wildlife Service, Newfoundland and the five westernmost provinces; the caribou inventory by the Federal Government and the Governments of Alberta, Saskatchewan, Manitoba, Quebec and Newfoundland; the Trans-Canada Highway Compounds and Picnic Areas Program established in 1958 without Ontario and Quebec; a significant program of acquisition of wetlands waterfowl habitat areas; and Fur Conservation Agreements between the Federal Government and Ontario, Manitoba and Saskatchewan for the construction of water control works, mainly to improve muskrat and migratory bird habitat. The Roads to Resources program, carried out under agreements with the provinces made between 1958 and 1960, is a substantial federal-provincial program involving construction of access roads in Canada's "pioneer fringe" The Department of Forestry and Rural Development administers the Composite Forest Agreements which involve an annual allotment by the Federal Government of $\$ 7,910,000$ for purposes of inventory, fire protection, access roads and trails, and forest stand improvement. Forest products research, a joint federal-provincial-industry program of spraying to control budworm infestation of spruce forests in New Brunswick, and various other programs of research and forest stand improvement are in effect.

Notwithstanding the magnitude of these federal and federal-provincial programs, and the large number of federal agencies concerned with resource use and development in Canada, it should be noted that the provincial governments assume a role which, in total. is many times larger than that of the Federal Government.

## CHAPTER XI.--AGRICULTURE

## CONSPECTUS

| Pate |  | Subsection 1. Income from Farming Operations $\qquad$ | Page |
| :---: | :---: | :---: | :---: |
| Section 1. Federal Government in Relation to Agriculture. . | 449 |  |  |
| Subsection 1. Services of the Canada Departinent of Agriculture. | 449 | Subsection 2. Volume of Agricultural Production. | 473 |
| Special Article: Federal Assistance in |  | Subsection 3. Field Crops. | 474 |
| Livestock Improvement. | 453 | Subsection 4. Livestock and Poultry | 479 |
| Subsection 2. Farm Assistance Programs. | 457 | Subsection 5. Dairying. <br> Subsection 6. Fruits, Vegetables and Other | 483 |
| Section 2. Provinclal Governments Relation to Agriculture. | 463 | Farm Products. Subsection 7 . Prices of Agricultural Producta | 488 488 |
| Subsection I. Agricultural Services. | 463 | Subsection 8. Food Consumption, | 500 |
| Subsection 2. Agricultural Schools, Colleges and Universities. | 468 | Section 4. Agricultural Statigtics of the Cenbus. | 503 |
| Section 3. Statigtice of Agrteulture. | 469 | Secion 5. International Crop Spatigmics. | 505 |

## The interpretation of the symbols used in the tables throughout the Year Book will be found on $p$. viii of this volume.

Agriculture has been and continues to be a most important part of the Canadian economy. Farm cash receipts for agricultural production in 1965 reached a total of $\$ 3,804,000,000$ but this value of primary farm production gives only a partial view of the importance of the industry. To this must be added the processing, the transportation and the myriad other allied groups that are involved in the movement and transformation of the raw product of the farm into food for Canada and for the world. Despite the fact that only about 10 p.c. of the present Canadian work force is engaged in agricultural pursuits, compared with about 25 p.c. in the mid-1940s, agricultural production has, in the same period, increased by about 40 p.c. The primary producer, the farmer, has become more efficient, producing more food with less help, and the processing industry has paralleled that increase in efficiency.

It may be said that the dominant trends in Canadian agriculture since the end of World War II have been the marked reduction in the number of farms and in the farm labour force, accompanied by increases in capital investment, in specialization, in mechanization and in output. These trends have not yet run their course so that adjustment is constantly taking place in the structural organization of agriculture at the farm level. In addition, important developments have occurred in the marketing, processing and handling of farm products and in the response of industry to serve agriculture with the necessary machinery and production supplies.

Although a great many farms have been transformed into extensive, modern, efficiently operated units, there are still large numbers that have not made this adjustment. The returns from agricultural output on these old-type farms are small and their operators often find it necessary to seek part-time employment in off-farm activities. Even on farms where adjustments have been made to larger acreages or more capital input, there is a great disparity in revenue between the smaller and larger farms. Increased productivity for the group as a whole barely meets the increased costs of modern farming. Prices of farm products generally have not risen as fast as the costs of the goods and services that farmers purchase. The impetus on the part of farmers is to continue to increase efficiency and to exert as much influence as possible in effecting higher returns for their products.

Farmer groups have entered extensively into the marketing and processing of farm products, either through the formation of co-operatives or of marketing boards. Aided by government legislation, producer marketing boards have been established for many products with the avowed purpose of stabilizing prices. Direct government aids are also available through price stabilization legislation, crop insurance and farm credit policies. Thus the role of governments and of farmer-controlled companies in the marketing of farm products is expanding year by year. On the other hand, private industry still holds and likely will continue to hold an important place in the processing and marketing field. Geographical shifts in production have required the construction of new plants, especially for livestock slaughter, and in recent years a number of new plants have been built for the processing of fruit and vegetable crops. Progressive trends in agriculture have also had the effect of increasing demand for many industrially produced commodities and services such as machinery, electricity, fertilizers, antibiotics, pesticides and 80 on, farmer expenditures for which have been increasing at a rapid rate in recent years.

Although improvements in farm practices have certainly resulted in greater agricultural productivity in recent years and will continue to do so, it must not be forgotten that weather is still a dominant factor in agricultural output and can cause considerable variation from year to year in the over-all farming picture or in the output of certain localities or of certain crops. In 1966 the weather was particularly favourable for crop production with the result that the index of field crop output $(1949=100)$ rose to 204.1 , the highest level ever reached.

## Section 1.-Federal Government in Relation to Agriculture*

The Canada Department of Agriculture dates from Confederation. It was established in 1867 as an outgrowth of a Bureau of Agriculture set up in 1852 by an Act of the Legislature of the Province of Canada. The Department derives its authority from the British North America Act, 1867, which states in part that "in each province, the legislature may make laws in relation to agriculture in the province" and that "the Parliament of Canada may from time to time make laws in relation to agriculture in all or any of the provinces; and any law of the legislature of a province relative to agriculture, shall have effect in and for the province as long and as far as it is not repugnant to any Act of the Parliament of Canada"

A Department of Agriculture with a Minister of Agriculture at its head was accordingly established as part of the Government of Canada. Departments of Agriculture headed by provincial Ministers of Agriculture were also set up by the provincial governments, except in the Province of Newfoundland where agricultural affairs are dealt with by the Agricultural Division of the Department of Mines, Agriculture and Resources. The agricultural affairs of the Yukon and Northwest Territories are administered for the Federal Government by the Department of Indian Affairs and Northern Development.

## Subsection 1.-Services of the Canada Department of Agriculture

The activities of the Canada Department of Agriculture (CDA) fall into three broad groups: research, promotional and regulatory services, and assistance programs. Research work is aimed at the solution of practical farm problems through the application of fundamental scientific research to all aspects of soil management and crop and animal production. Promotional and regulatory services are directed toward the prevention or eradication of crop and livestock pests and the registration of chemicals and other materials used to achieve that end and toward the inspection and grading of agricultural products and the establishment of sound policies for crop and livestock improvement. Assistance programs cover some of the sphere of soil and water conservation, price stability, provision of credit, rural rebabilitation and development, and crop insurance and income security in the event of crop failure.

[^149]The Department has four main Branches-Research, Health of Animals, Economics, and Production and Marketing-and its organization includes a number of smaller unitsthe Agricultural Stabilization Board (see p. 457), the Agricultural Products Board, the Prairie Farm Rehabilitation Administration (p. 445), Crop Insurance (p. 458), the Information Division and Departmental Administration. Agencies closely allied with the Department and responsible to the Minister of Agriculture are the Farm Credit Corporation (p. 460) and the Board of Grain Commissioners (see Part II of Chapter XXI).

Research Branch.-The research activities of the Department are undertaken mainly by the Research Branch at some 60 centres across the country, although important contributions are also made by the Economics Branch (p. 452), the Health of Animals Branch (p. 451) and the Grain Research Laboratory operated by the Board of Grain Commissioners for Canada (p. 451). About 1,000 research workers are employed by the Department and their specialties run the gamut of scientific agriculture from genetics to engineering. Most of the research is directed from Research Branch executive headquarters at the Central Experimental Farm in Ottawa. Also located there are the statistical, engineering and analytical chemistry research services, together with six of the eight institutes for research on animals, food, entomology, microbiology, plants, soils, biological control and pesticides. Throughout the ten provinces there are 13 research stations, 27 experimental farms, a laboratory and a number of substations.

Originally, the main task of the experimental farms was to determine the potential of the various combinations of soil and climate for producing crops and maintaining livestock, and to develop and test varieties, breeds and management practices suitable for each area. Today's federal research program continues with this early work but is designed to meet the specific needs of domestic and export markets. The accent is on promoting greater efficiency in production and diversification of cropping practices.

Canada's main crop for generations has been wheat, the efficient production of which stems directly from the help the grain growers have received from research. Without the new varieties produced by plant breeding, it would be unprofitable to grow wheat on large areas of the wheat belt. Comparable improvements in oats and barley have enabled the farmer to continue to grow these valuable cereals despite the incidence of pests and diseases, drought and short growing seasons. Research has also augmented livestock returns to farm incomes by developing better grasses and legumes adapted to the various regions of Canada that differ in climatic and soil conditions. Research in other crops, notably oil seed plants and potatoes, has resulted in new varieties with resistance to diseases, with improved quality and suitability for specific processing, and adapted to the different growing areas. More than 80 new varieties of crops have been developed and put into commercial production in the past five or six years. It may be added that research into the storage and processing of crops has been recently accelerated and has led to valuable innovations in the fruit and vegetable industries and in the protection of stored grain.

In livestock, the main lines of progress are through genetics and nutrition and the main subjects are dairy and beef cattle, pigs, poultry and sheep. The advantages of selective breeding have been evidenced through the records of animals tested for many years (see pp. 453-457). The CDA developed a new breed of hog, the Lacombe, which is proving a worthy addition to the old-time breeds. Romnelet, a range-type sheep, was also an outcome of federal breeding programs. Crosses of several meat-type strains of chickens made at federal institutions have led to performance superior to that of pure strains. Extensive studies on the causes and control of diseases and parasites of livestock, fur bearing animals and wildlife are carried on with the result that epidemic outbreaks rarely occur and when they do are quickly suppressed. Live animals and meats must attain the high standards required in the export trade.

A matter of constant concern is the protection of crops from diseases and pests. Chemicals have proved to be potent weapons but there is also a continuing search for other control methods. Many weeds can be eradicated by proper tillage and cropping methods
and a few have been controlled by insects that feed on them exclusively and destroy them. Fungus diseases may be checked by developing resistant varieties of crops. In biological control, parasites or predators are produced and released to prey on certain insects and eliminate them. Sterilization of male insects by radiation or chemical means is another method used to reduce insects of various kinds.

An area of special interest is that of farm mechanization in which there has been tremendous development in the past 60 years. The Research Branch is expanding its studies in this field at the Engineering Research Service in Ottawa and in the Maritime Provinces, and uviversities are being encouraged to study the subject more intensively.

Soil surveys are conducted in all provinces in co-operation with provincial departments of agriculture and the universities. Soils are examined and classified as to their chemical and physical characteristics and potential productivity. The resulting information is of inestimable value in setting up land uses under the ARDA program administered by the Department of Forestry and Rural Development (see pp. 445-446). Soil fertility is under study at all experimental farms and at many research stations and is undertaken in close co-operation with the universities. Agrometeorology, a relatively new discipline, is opening nerr opportunities to growers to make the most use of the heat, light and moisture available in each farm area.

Although most agricultural research is carried out by the CDA, important programs are also undertaken by the provincial governments and agricultural colleges. Close liaison exists between these different agencies to avoid duplication and to ensure that the services offered by the Federal Government through provincial extension officers is of the kind needed by farmers. Federal research establishments across the country are represented on provincial committees concerned with field crop varieties, fertilizer practices, soil fertility, spray programs, feld crop and animal managernent, and horticulture. Such collaboration ensures that new practices discovered by research are brought quickly to the attention of extension groups to recommend for local use.

The Grain Research Laboratory.-This Laboratory provides scientific services required in the administration of the Canada Grain Act. It carries out annual studies of the quality of the new crop cereals, maintains a continuous check of the quality of cereal grains as they move forward from the farm to marketing positions and plays a major role in testing (prior to licensing) the quality of plant breeders' varieties of various cereals. A comprebensive program of basic and applied research relating to the quality of Canadian cereal grains is an important task of the Laboratory.

Health of Animals Branch.-This Branch administers the Animal Contagious Diseases Act, the Meat Inspection Act and the Humane Slaughter of Food Animals Act, and operates laboratories for the study of animal diseases. Contagious diseases of animals are controlled through preventive measures of inspection and quarantine of imported livestock and restricted commodities such as meat, farm products and other possible sources of infection; through conducting disease eradication programs, notably of bovine tuberculosis, brucellosis and Johne's disease; through the control and eradication of serious animal disesses when outbreaks occur; and through inspection and certification as to bealth of livestock for export. The Animal Pathology Division consists of the Animal Diseases Research Institute at Hull, Que., the Animal Diseases Research Institute (Vestern) at Lethbridge, Alta., and seven branch laboratories; these establishments conduct research and investigations on infectious diseases of animals and produce the biological products required in their control. The Division also provides diagnostic services for diseases of domestic and wild animals and conducts a training program for departmental officers and veterinarians from other lands. The Meat Inspection Division conducts ante-mortem and continuous post-mortem examination of animals slaughtered at packing plants that market their meat products outside of the province in which they operate, ensures maintenance of sanitary standards during processing of the products, accurate labelling and proper kind and use of ingredients and preservatives; it ensures also that, in these plants, the animals are slaughtered in a humane manner.

Economics Branch.-This Branch collecte, analyses and interprets economic information needed to formulate and administer departmental programs and policies and does intelligence and research work designed to increase efficiency in agricultural production and marketing and to guide farmers in making needed adjustments in farm organization and operation. It acts as an economic and statistical research agency for the Agricultural Stabilization Board, the Prairie Farm Rehabilitation Administration and other bodies, and assists in any economic undertakings with which the Department is concerned. The Branch is also closely associated with the work of the Food and Agriculture Organization of the United Nations, the UN/FAO World Food Program, the General Agreement on Tariffs and Trade, and the Directorate of Agriculture of the Organization for Economic Co-operation and Development.

Production and Marketing Branch.-The Production and Marketing Branch conducts many of the promotional and regulatory functions of the Department. Six specialized divisions administer legislation and policies in the production and marketing of livestock, poultry, fruits and vegetables, dairy products and plant products, and policies in connection with the control of disease in plants. A General Service Division supplements and complements the specialized divisions in matters of common concern.

The Livestock Division (see also pp. 453-457) administers legislation dealing with the grading of meat, wool and fur, with the registration of livestock pedigrees, with performance testing of cattle and hogs and with the supervision of racetrack betting. Other activities include the promotion of livestock improvement and the compilation of market statistics. The Poultry Division carries out the policies of the national poultry breeding program, including Record of Performance for poultry and hatchery inspection, and administers the regulations for the grading of poultry products. The Fruit and Vegetable Division administers legislation having to do with the grading of fruits and vegetables in both fresh and processed form, maple products and honey. The Division is responsible for the licensing of interprovincial and international dealers and brokers who deal in fresh fruits and vegetables. The Dairy Products Division administers the Cheese Factory Improvement Act and legislation covering grades and standards for dairy products, including butter, cheese, concentrated milk products and ice cream. The Plant Products Division administers Acts and regulations respecting seeds, feedstuffs, fertilizers and pest-control products, conducts field inspections and maintains regional testing laboratories. The Plant Protection Division is responsible, under the Destructive Insect and Pest Act, for safeguarding against the introduction of serious plant insects or diseases into Canada or their spread in Canada, for certifying freedom from disease and pests in plant exports, and for seed potato certification.

The General Service Division maintains inspectors in the principal marketing areas to make spot checks on retail outlets to see that food products meet prescribed standards of quality and grade; maintains cargo inspectors at the main Canadian ports to check the handling of goods moving to export markets; administers the payment of subsidies for the construction of public cold storage facilities; compiles and distributes market information; and co-operates with the commodity divisions in developing markets for Canadian foods and in interpreting the grading and inspection regulations to the public.

Information Division and Departmental Administration.-The Information Division gathers and publishes information arising from research work and the development of regulatory programs of the Department. Publication is through the printed word, press and radio releases, motion pictures, television and exhibits. The general business management of the Department is undertaken by the Departmental Administration, the duties of which also embrace Emergency Measures Planning and the Departmental Library; the main emphasis of the Library's collection is, of course, on agriculture but extends also to the life sciences.

## FEDERAL ASSISTANCE IN LIVESTOCK IMPROVEMENT

The Canada Department of Agriculture (CDA) has always assisted the livestock industry in its attempts to reach a high level of efficient production with top-quality animals. Programs designed and carried out with this aim concern mainly the food animals-beef and dairy cattle, swine and sheep.

Canada has a large population of purebred cattle, swine and sheep. The general object of any improvement program is to identify bloodlines that will be most suitable to up-grade the commercial herds. In the case of meat animals, this means identifying the kind of breeding stock that will produce market animals with the minimum output of time and feed; in the case of dairy cows, yield of milk is, of course, the criterion; and in sheep, the products are spring lamb and wool. To these ends the industry relies mainly on the Livestock Pedigree Act, Record of Performance (ROP), grading of carcasses and competition through agricultural fairs, in all of which the Federal Government is deeply involved.

## Livestock Pedigree Act

The Livestock Pedigree Act (RSC 1952, c. 168) provides for CDA supervision of the affairs of the breed associations registering livestock in Canada. The conditions of registration are carried out by the independently operated breed associations with the Government verifying the certificates containing the pertinent data of ancestry and ownership. A registration certificate in Canada, therefore, has the status of a legal document.

The Canadian National Live Stock Records (CNLSR) is not a government office. It is a non-profit, record-processing organization, carrying out the instructions of the affiliated breed associations on all matters pertaining to registration of purebred livestock. The Department of Agriculture must approve amendments to the constitutions and bylaws of the atational breed associations, and registration certificates issued by the CNLSR. There are 31 affiliated breed associations in the CNLSR and four associations incorporated under the Act which carry on their own recording activities. In 1965, membership in the 38 associations (three administered by the Record Board) was 42,178 ; registrations numbered 279,910 and transfers 207,867.

The registration of purebred livestock in Canada is an industry in its own right. The recognition given to Canadian livestock pedigrees throughout the world is a tribute to the success of the co-operative effort of Government and breed associations in providing authenticated pedigree certificates.

## Record of Performance Programs

Dairy Cattle.-ROP programs for dairy cattle were initiated in 1905 and have kept abreast of changes in dairy production techniques to provide the services and leadership required in the industry. ROP is now an integral part of dairy cattle production and has enhanced the stature of Canadian breeding stock in world trade. ROP records are the only dairy testing records officially recognized by the breed associations, and constitute the production requirements for registration of male calves in three of the four major dairy breeds.

Some 4,000 breeders are enrolled in the program and test in the neighbourhood of 110,000 cows each year. Although this is only $3 \frac{1}{2}$ p.c. of Canada's total dairy cow population, it constitutes basic seed stock testing adequate to provide the nucleus for the national purebred dairy herd, which in turn is the nucleus on which the commercial dairy cattle population is built. Because artificial insemination of cows is widely practised in Canada, breeding to ROP-tested stock is available to all farmers. At present, 60 p.c. of all dairy calves registered were sired by purebred bulls at Artificial Insemination (AI) stations. Dairy bull semen was used to inseminate 607,000 cows in 1964 and it was estimated that approximately 20 p.c. of the national cow population was AI-bred in 1965.

The AI stud is a seed reservoir which has a vital bearing on the growth in quality of the commercial herds because it contains proven bloodlines of many breeds. For this reason dairy sire appraisals, instituted as an adjunct to $R O P$ and sire reports, have become an essential part of dairy ROP Sire appraisal is based on contemporary comparisons and a bull is rated only when he has a minimum of 20 effective daughters to his credit. These reports on sires are of considerable significance to both the AI industry and to the breed associations. They rate bulls of each breed on the average performance of their daughters compared with the performance of contemporary cows in the same herd but from other sires. The identification of plus-producing and minus-producing sires from these ratings permits identification of the superior and inferior sires.

Beef Cattle.-Although the ROP program for beef cattle has been in effect for only ten years, it has already proved to be a sound means of identifying the performance traits of greatest economic importance to the beef industry. Beef cattle testing is carried out as a joint federal-provincial program with the guidance and co-ordination of the Livestock Division of the Department of Agriculture's Production and Marketing Branch. Performance testing seeks to measure the ability of breeding stock to perform in all traits of basic economic importance; in the case of beef cattle this includes reproduction efficiency, longevity, gainability, feed efficiency and carcass value.

Testing is carried out at three levels: the federal-provincial ROP herd test program; the station testing of individual bulls and sire progeny groups of bulls; and the beef sire progeny testing through the performance test and carcass appraisal of steers. The second and third levels come under the recently established Canadian Beef Cattle Test Station policy.

The basic objective of the herd test program is to identify those sires and dams that have a high rate of reproductive efficiency, and progeny that demonstrate above-average ability to make rapid and economic gains. In this manner, future herd sires and replacement females are positively identified as well as the dams and sires that should be removed from the herd. In the 1965-66 test year, approximately 10,500 calves were tested in 330 herds representing all but two provinces, the number being approximately 11 p.c. of all beef calves registered in 1965; this record may be compared with that of 1956 when a total of 341 calves from 15 herds in three provinces were tested. The federal Livestock Division co-ordinates the program and compiles and issues the results. The provincial governments provide the extension and supervision required to operate the program within each province. Ontario operates its own provincial herd testing program.

The second year of beef bull station testing under the ROP policy was completed in 1966 with 700 bulls passing through stations in Alberta, Saskatchewan and Manitoba. Ontario operates its own testing program but the federal Livestock Division co-ordinates and reports the operations of all stations for the information and use of the industry; This form of testing supplements and complements the ROP test carried on within breeders' herds and gives a contemporary comparison of individual bulls or sire progeny groups of at least five bulls tested under uniform conditions.

Beef sire progeny testing through performance and carcass appraisal requires ten steer progeny and is designed for use by breeders participating in the ROP herd test. The test has been mainly used in the appraisal of sires for AI batteries. Since 1959 over 100 sires in AI studs have been tested through this program. Such testing represents the ultimate currently available in the assessment of beef cattle performance traits. It is by far the most expensive form of testing and therefore needs to reflect the activities carried out in the less expensive procedures of herd testing and station testing of bulls. A great deal can still be done through the progeny test to appraise the value of sires in breeders' herds in comparison with those in use at the AI centres. Beef sire progeny testing is at present carried out only in British Columbia and Alberta.

The progressive livestock farmer who applies these proved testing procedures assures himself of a larger income and the nation of a higher beef and milk productivity.

Swine.-The ROP program for swine began in 1928 as "The Advanced Registry for Swine" in line with the hog-grading activities initiated in 1922. Over the years, the swine-testing program was modified to retain a practical approach to the situation as it changed within the industry. In 1957 the Advanced Registry Board, under which it operated, was dissolved and the Department of Agriculture took on the function of operating the policy as ROP for swine. At the same time home testing (testiog at the premises of the breeder) was reinstituted in an endeavour to accelerate testing activity. As a result, swine testing increased annually and in 1965 a 5 -p.c. increase over the previous year was registered when 355 breeders tested 1,519 groups of four pigs, as required in the ROP test.

The most recent significant change was a revision applicable to pigs born after Jan. 1, 1965 which altered both the measurements used to assess the carcass and the terms in which carcass merit was reported. The new carcass appraisal included, for the first time, assessment of the ham muscling and excluded, for the first time, assessment of the belly bacon. Reports issued on groups tested prior to 1965 were made in terms of a score calculated from specific measurements taken on the carcass. The new method entails a prediction of the lean content of the four major wholesale cuts from the hog as a means of estimating the salable content of trimmed carcass. Pre-1965 test results were based on maximum scores being provided for intermediate rather than maximum measurements. As a result, optimum carcass scores were given for intermediate measurements since no credit was provided for measurements in excess of that receiving the maximum point score. Under the new system, full credit is given for the actual measurements taken which are included in the calculation of percentage yield of trimmed cuts, thus permitting the assessment of swine carcasses relative to their merit in the meat trade.

A new system of reporting tests has been developed to provide current results to breeders more promptly. Weekly reports go forward to all ROP breeders giving test results across the country. An abbreviated report on the top-performing $15-20$ p.c. of the matings tested each week is provided to the industry through the Livestock and Meat Trade Report and press channels; it includes an index combining the assessment for yield of trimmed cuts and the maturity of the test group.

The ROP program for swine has been adopted as the basis for the establishment of Elite Herd Policies within the provinces. This development has been fostered by the Canadian Federation of Agriculture through swine conferences held in 1964 and 1965, and represents a tangible use of ROP for swine improvement on a herd basis.

Investigation and Study of New Developments.-In the field of dairy cattle production, activity in recent years has been directed to the development of a practical field system of testing for solids-not-fat in milk. The Livestock Division maintained a joint operation with the Ontario Agricultural College to assess the feasibility of routinely testing milk for all constituents. Various methods were tried over a five-year period, one of which-an automated method adaptable to electronic data processing (infra-red milk analysis)-was found to be highly successful, although detailed results are not yet available.

The sire appraisal work for dairy bulls in AI centres began as a pilot project but now constitutes a major part of ROP. Beef bull progeny testing also began as a pilot project, as did the station testing of beef bulls. Now both these facets of beef testing are specific functions within the ROP operation. A pilot project to assess the validity of testing sires through veal calves is under way. A pilot project to determine the feasibility of operating a bull test station in the Maritime Provinces is also being investigated.

In swine production, investigations have been made into the merit of specified crossbreeding practices on a large scale. In trials, three-way crossbred pigs were found to produce 26 p.c. more pounds of carcass at 180 days of age than did purebreds. The 26 p.c. was the combined difference in pounds due to larger litters, better livability, and faster growth. In addition, the percentage of Grade A pigs was higher among the crossbreds
than among purebreds. A pilot project of "back fat probing" as a supplementary means of assessing hog quality is under development. These projects are carried on in two wayseither on initiation of the Livestock Division or in co-operation with provincial committees dealing with a particular phase of livestock production.

Investigations have been carried on in co-operation with the Demonstration Farm Service of the Ontario Department of Agriculture with respect to the feasibility of establishing an ROP program for sheep. At present the major activity in the field of sheep promotion and improvement is the financial assistance provided in the movement of commercial ewes and ewe lambs to areas where there is a lack of sheep for breeding purposes. Lamb and wool production in Canada have declined steadily but CDA continues its efforts to promote development of the industry Canada would need $9,000,000$ sheep to eliminate wool imports but the national flock in 1966 numbered just over $1,000,000$.

## Livestock Grading

Hog grading came into effect in Canada in 1922, beef carcass grading in 1929 and carcass grade standards for lamb and veal carcasses in subsequent years. In 1958, after consultation with the industry, regulations covering grades for beef and veal, hogs, lamb and mutton were written into the Canada Agricultural Products Standards Act. The new standards were more specific and permitted greater uniformity of application. To maintain this uniformity, Livestock Division staff constantly check grades at the national, regional and local levels in 79 inspected and 77 approved packing plants operating throughout the country.

The Federal Government began paying hog quality premiums in 1944-\$2 for a Grade A and $\$ 1$ for a Grade B carcass. In 1963, the premium to producers was changed to $\$ 3$ for Grade $A$ and the premium for Grade $B$ was removed. The lamb premium policy was begun in 1961 with $\$ 2$ for Choice and $\$ 1$ for Good carcasses weighing $36-51 \mathrm{lb}$. Since 1962, premiums have also been paid for Choice and Good carcasses of $52-56 \mathrm{lb}$. warm dressed weight.

Grading classifies units of a commodity into groups according to established and generally accepted criteria, thereby providing an efficient basis for the pricing and marketing of carcasses of different quality levels. Grading is utilized by the producer as a basis of sale, by the packer as a guide in buying and selling, and by the retailer in providing for his customers a uniform supply of the type and quality of meats desired. At the retail level grading is concerned with quality, condition and packaging. Grading provides the neces. sary vehicle by which consumer preferences are transmitted back to the producer, it facilitates trading between buyers and sellers and it provides a standard by which consumers are assisted in selecting the quality most desired. Because better grades bring better prices, grading is both a guide and an incentive in the improvement of livestock.

## Fairs and Exhibitions

The Federal Government has been making grants to fairs and exhibitions since 1903. Twelve Dominion exhibitions held between 1902 and 1914 received grants totalling $\$ 658,000$ through that period. In 1915 it was decided to help all of the larger fairs and to provide half of the prize money paid out on utility classes of horses, cattle, sheep, swine and poultry. At a Fairs Conference in 1923 " A " and " B " fair classifications were adopted, one to three "A" fairs being allotted to each province. The grant to " $A$ " fairs was $\$ 5,000$ and to " B " fairs, $\$ 1,500$. Grants for junior activities and of judging fees were added in 1936. From 1912 to 1940 , there were 101 fairs held in 92 districts of the then nine propinces.

After World War II, the Department made available building agreements and grants covering one third of the cost of construction, the annual grant being limited to $\$ 10,000$ covering one the total to $\$ 100,000$. In the past 15 years, the Department has paid $\$ 7,000,000 \mathrm{in}$ major capital grants, which accounted for about 30 p.c. of the total cost of buildings constructed under this assistance. Exbibition Grants Regulations were amended in 1957 to include grants to agricultural museums.

A major move toward using fair competitions to promote livestock improvements was taken in 1964-65. Prize money was offered for specified livestock classifications drawn up by the Department following discussion with exhibition, provincial government and breed association officials. The plan was to place more emphasis on utility in purebred livestock fair competitions, to reduce the exhibitions' cost of showing, to encourage more breeders to exhibit, and to increase spectator interest. The new classifications sharply reduced the number of classes and exhibitors were generally limited to one entry per class. Utility features introduced included production requirements on dairy cattle entries, proof of productivity such as "cow with calf at foot" in the beef classes, ROP requirements on swine entries, and "ewe with lambs at foot" in the sheep classes. Carcass classes for steers, barrows and lambs carried appraisal through from the live showing at the fair to slaughter and subsequent display of the carcass at the fair. Interbreed classes were held for steers, hogs and sheep and an interbreed "best udder" class was introduced for dairy cows.

Of the 10 winter and spring fairs, 32 class A exhibitions and 100 class $B$ exhibitions held in 1965, 96 adopted the new livestock classifications in whole or in part. It is estimated that 90 p.c. of the listed exhibitions adopted the classifications in whole or in part in 1966.

Grants to fairs, exhibitions and agricultural museums in 1965-66 totalled \$918,340 distributed as follows: permanent improvements, $\$ 211,711$; judges' fees, $\$ 36,243$; junior activities, $\$ 100,200$; special grants, $\$ 123,000$; major building grants, $\$ 12,736$; and prize money grants to fairs adopting the new livestock classifications, $\$ 433,450$.

## Subsection 2.-Farm Assistance Programs

Basic to the concept of Canada's national agricultural policy is the premise that a stable agriculture is in the interests of the national economy and that farmers as a group are entitled to a fair share of the national income. In pursuit of these objectives, the Department of Agriculture has carried on, over a long period, a program designed to aid agriculture through the application of scientific research and the encouragement of improved methods of production and marketing. Over the years, as conditions have warranted, programs have been initiated to deal with special situations such as the Prairie Farm Rehabilitation Act (see p. 445) to deal with the results of the drought in the 1930s; the Prairie Farm Assistance Act (p. 462) to mitigate the effects of crop failure; Feed Grain Assistance Regulations (p. 462) to assist in the movement of western feed grains to Eastern Canada and British Columbia; and the Maritime Marshland Rehabilitation Act (p. 440) to save valuable soil in the Maritime Provinces.

Although much has been accomplished and is still being accomplished by these measures, changes in the past two decades have dictated a new approach to some problems. Large-scale mechanization was the sequel to the reduction of manpower available to farmers; the number of farms declined but the size of farms increased; marketing and income problems took different forms. Legislation enacted to meet these situations include price support (Agricultural Stabilization Act), crop insurance (Crop Insurance Act), resource development (Agricultural and Rural Development Act) and credit facilities (Farm Improvement Loans Act, Prairie Grain Advance Payments Act, Farm Credit Act and Farm Machinery Syndicates Credit Act). These measures, with the exception of the Agricultural and Rural Development Act (see pp. 445-447), are described individualiy below.

Agricultural Stabilization Act.-The Agricultural Stabilization Act (SC 1958, c. 22, proclaimed Mar. 3, 1958) established the Agricultural Stabilization Board and repealed the Agricultural Prices Support Act, 1944. The Board is empowered to stabilize the prices of agricultural products in order to assist the agricultural industry in realizing fair returns for labour and investment, and to maintain a fair relationship between prices received by farmers and the costs of goods and services that they buy.

The Act provides that, for each production year, the Board must support, at not less than 80 p.c. of the previous ten-year average market or base price, the prices of nine commodities (cattle, hogs and sheep; butter, cheese and eggs; and wheat, oats and barley produced outside the prairie areas as defined in the Canadian Wheat Board Act). Other commodities may be supported at such percentage of the base price as may be approved by the Governor in Council. Since the Act came into force, the following farm products, other than the nine named commodities, have been supported at one time or another: honey, potatoes, soybeans, sunflower seeds, sugar beets, tobacco, turkeys, apples, peaches, sour cherries, apricots, raspberries, asparagus, tomatoes, milk for manufacturing and skim milk powder. The Board may stabilize the price of any product by an offer-to-purchase, by a deficiency payment, or by making such payment for the benefit of producers as may be authorized.

In stabilizing prices of certain commodities by means of deficiency payments, the price stabilization program has been assisting the agricultural industry to make production adjustments from a position of excessive supply to one of more normal relationship between supply and demand. The institution of limited deficiency payments by the Board assists in the adjustment of production in a relatively short time. During the period of adjustment, the Board guarantees a minimum average return to producers for a limited quantity of product.

During the seven fiscal years that the Act was in operation prior to Mar. 31, 1965, the cost of stabilization programs averaged $\$ 57,000,000$ a year and was little changed in the following fiscal year. The Board has available a revolving fund of $\$ 250,000,000$. Losses incurred are made up by Parliamentary appropriations and any surplus is paid back to the Consolidated Revenue Fund. An Advisory Committee named by the Minister of Agriculture and composed of farmers or representatives of farm organizations assists the Board in its operations.

Crop Insurance Act.-To assist in making the benefits of insurance protection on crops available in all provinces, the Crop Insurance Act was passed in 1959. This Act does not set up any specific insurance scheme but rather permits the Federal Government to assist the provinces to do so by making direct contributions toward the cost of providing crop insurance. The initiative for establishing schemes to meet their own regional requirements rests with the provinces. Schemes may be organized on the basis of specific crops or areas within the provinces and agreements between the provinces and the Federal Government set out the terms of insurance coverage. By Sept. 12, 1966, crop insurance legislation had been passed by all provinces except Newfoundland and Quebec, and the latter province was preparing similar legislation.

Under the Act and amendments of 1964 and 1966, the Federal Government will pay 50 p.c. of the administrative costs incurred by a province and 25 p.c. of the amount of premiums required to make the scheme actuarially sound. In addition, the Federal Government may make loans to any province equal to 75 p.c. of the amount by which indemnities required to be paid under policies of insurance exceed the aggregate of the premium receipts for that year, the reserve for the payment of indemnities, and $\$ 200,000$. As an alternative to such loans, the Federal Government may re-insure a major portion of the provincial risk in a program taken out under the Crop Insurance Act. Farmers insured under the Act are not eligible for payments under the Prairie Farm Assistance Act, nor are they required to pay the 1-p.e. levy on grain sales as provided for under that Act.

In $1965,13,500$ farmers received coverage under the Act for a total of $\mathbf{\$ 2 6}, \mathbf{0 0 0}, 000$.
Farm Improvement Loans Act.-The Farm Improvement Loans Act (RSC 1952, c. 110), administered by the Department of Finance, is designed to provide credit by way of loans made by the chartered banks to assist in almost every conceivable purchase or project for the improvement or development of a farm and includes the purchase of agricultural implements, the purchase of livestock, the purchase and installation of agricultural equipment or a farm electrical system, the erection or construction of fencing or works for
drainage on a farm, and the construction, repair or alteration of farm buildings including the family dwelling. Credit is provided on security related to the purchase or project and on terms suited to the individual borrower.

The legislation, originally operative for three years (1945-48), has been continuous by way of extensions usually for three-year periods. The latest extension was for the period July 1, 1965 to June 30, 1968. The maximum term of a loan and the interest rate remain at ten years and 5 p.c. simple interest, respectively. The borrower is required to provide from 10 p.c. to $33 \frac{1}{3}$ p.c. of the cost of his purchase or project, depending on the loan category to which it belongs. The Federal Government guarantees each bank against loss sustained by it up to an amount equal to 10 p.c. of loans granted by it in a lending period. This guarantee does not apply to any loan made after the aggregate of all loans made by all banks in a given period reaches an amount fixed by statute. The current maximum stands at $\$ 700,000,000$. By Dec. $31,1965,2,905$ claims amounting to $\$ 2,094,404$ had been paid under the guarantee since the inception of the Act, representing a net loss ratio of less than one tenth of one per cent after recoveries have been taken into account. The maximum loan or amount which may be outstanding to a borrower at any one time stands at $\$ 15,000$.

By the end of $1965, \$ 1,388,582,471$ or 80.3 p.c. of the total loans made had been repaid. The position at that time was as follows:-

| Period | Loons Made | Repayments ${ }^{1}$ | Balance Outstonding |
| :---: | :---: | :---: | :---: |
|  | * | * | \% |
| Mar. 1. 1945 to Feb. 28, 1948. | 33,605,576 | 33,605,576 | - |
| Mar. 1, 1948 to $\mathrm{Feb} .28,1951$. | 142,372.774 | 142,367. 521 | 5,253 |
| Mar. 1, 1951 to Mar. 31. 1953. | 190,449,006 | 190,419,889 | 29.117 |
| Apr. 1, 1958 to Mar. 31, 3956. | 222,723,494 | 222,602,227 | 121,267 |
| Aptr 1, 1956 to Mar. 31, 1959. | 239,064,072 | 238,337.976 | 726,096 |
| Apr. 1, 1959 to June 30, 1962. | 346,911,319 | 334.592.293 | 12.319.026 |
| July 1, 1962 to June 30, 1965. | 447,766,288 | 223.200.017 | 224,556.271 |
| July 1, 1965 to Dee. 31, 1965. | 106,624,012 | 3,456,972 | 103,167,040 |
| Totals. | 1,729,516,541 | 1,388,582,471 | 340,834,070 |

${ }^{1}$ Includea principal amount of claims paid under government guarantee.
1.--Loans Made under the Farm Improvement Loans Aet, by Purpose and Prorince, 1364 and 1905, with Cumulative Totals from 1945

| Purpose and Province | 1964 |  | 1965 |  | Cumulative Totals |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Loans | Amount | Loans | Amount | Loans | Amount |
| Purp | No. | 8 | No. | * | No. | * |
| Purchase of agricultural implements... | 58,302 | 109.899,350 | 68.428 | 152,412.830 | 1,017,107 | 1,392,256,395 |
| Construction, repair or alterations of, or making additions to any building or | 58,32 | 107 | 0. | 152,12.830 | 1, 17, 07 | 1,352,256,355 |
| structure on a farm | 8,508 | 21.075, 207 | 9.431 | 29,957,670 | 92,169 | 175.580,749 |
| Other improvements..................... | 9.005 | 14,278,399 | 7.876 | 13,871,160 | 96,593 | 117.328.244 |
| Other improvements. | 4.817 | 5.583.373 | 4,456 | 6,405,250 | 49,422 | 44,351.153 |
| Totals. | 80,632 | 150,836,373 | 91,191 | 202,706,210 | 1,255,291 | 1,729,516,541 |
| Newoun Prorince |  |  |  |  |  |  |
| Newfoundlend. <br> Prince Edward Kaland | . ${ }^{28}$ | - 63.176 | 1.22 | 47,459 | ${ }_{18}^{606}$ | 90915,758 |
| Nrince Edward yaland................. | 1,023 | 1,467,714 | 1,170 | 2,082, 835 | 18.329 | 20,573.486 |
| New Brunswick | ${ }_{581}^{862}$ | 1.011 .684 | 621 | 1,127.556 | 12,872 | 14,590. 103 |
| Quebec. | 2.725 | 1.839,964 | 2,049 | $1,239,136$ $4.861,968$ | 10.946 | 14.530, 001 |
| Ontario. | 15,260 | 29,149,925 | 16,795 | 38, 324,172 | 207.550 | ${ }^{152,495,990}$ |
| Manitobs. | 10,982 | 19.982.904 | 11,750 | 25,533.307 | 152,418 | 203.102 .781 |
| Aaskatchewan | 24,069 | $45,165.138$ | 28,891 | 84.149.297 | 359,792 | 498, 019.597 |
| Alberta Britioh Columbis ...................... | 23,012 | 42,187,529 | 28.799 | 58,634, 692 | 344, 124 | 468,643,797 |
| Brtien Columbia, . . . . . . . . . . . . . . . . . | 2,360 | 4,967+583 | 2.488 | 6,406,520 | 36,112 | 53,375,198 |

Prairie Grain Advance Payments Act.-This Act, which came into force on Nov. 25, 1957, provides for an interest-free advance payment to producers for threshed grain (wheat, oats, and barley) in storage other than in an elevator and prior to delivery to the Canadian Wheat Board, exclusive of grain deliverable under a unit quota. Advance payments of 50 cents per bu. of wheat, 20 cents per bu. of oats and 35 cents per bu. of barley are made, subject to certain restrictions as to quota and acreage. Maximum advance payment per application is $\$ 3,000$. Repayment is effected by deducting 50 p.c. of the injtial payment for all grain delivered subsequent to the loan, other than for grain delivered under a unit quota. The amounts deducted are paid to the Board until the producer has discharged his advance. At July 31, 1966, the position with respect to advances and refunds was as follows:-

| Period | Applicationk | Total Advance | Average Aivarce | Total Refunded | Percentage Refunded |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \$ | $\delta$ | \$ |  |
| Aug. 1, 1957-July 31, 1958. | 50,412 | 35,203,467 | 698 | 35, 199, 716 | 99.9 |
| Aus. 1, 1958-July 31, 1959 | 45,341 | 34,369,658 | 758 | 34,364,511 | 99.9 |
| Aug. 1, 1959-July 31, 1960 | 50,047 | 38,492,505 | 769 | 38,486,290 | 99.9 |
| Aut. I. 1960-July 31, 1961. | 76,089 | 63,912,550 | 840 | 63,899,404 | 99.9 |
| Aug. 1, 1961 -Jalv 31, 1962 | 22,342 | 16,656.713 | 746 | 18,642,231 | 99.9 |
| Aug. 1, 1962-July 31, 3963. | 39, 683 | 29.251.326 | 737 | 29,231,673 | 99.9 |
| Aug. 1, 1963-July 31, 1964. | 63,427 | 63,136,418 | 980 | 62,083,529 | 99.9 |
| Aug. 1, 1964-Juls 31, 1965. | 38,375 | 32,961,844 | 859 | 32,812,037 | 99.5 |
| Aug. 1, 1965-July 31, 1966.. | 43,509 | 40,600,386 | 933 | 38,813,703 | 96.5 |

Farm Credit Act.-The Farm Credit Act (SC 1959, c. 43, proclaimed on Oct. 5, 1959) established the Farm Credit Corporation as successor to the Canadian Farm Loan Board established in 1929. The Corporation, which is a Crown agency, reports to Parliament through the Minister of Agriculture.

The Act provides two types of long-term mortgage loans for farmers. Under Part II of the Act the Corporation may lend up to 75 p.c. of the appraised value of the farm land and buildings taken as security, or $\$ 40,000$, whichever is the lesser. Under Part III the Corporation may lend 75 p.e. of the appraised value of the farm land and buildings and of the livestock and equipment taken as security, or $\$ 55,000$, whichever is the lesser. To qualify for a loan under Part III a farmer must be under 45 years of age and have had at least five years of farming experience. Part III loans are further secured by mandatory insurance on the life of the borrower, and his farming operations are subject to supervision by the Corporation until the loan is reduced to 75 p.c. of the appraised value of the farm land and buildings. Similar life insurance and supervision are available on an optional basis to borrowers under Part II.

The interest rate on the first $\$ 20,000$ borrowed under Part II or the first $\$ 27,500$ under Part III is set by statute at 5 p.e. On that part of the loan which exceeds these amounts the interest rate is set by the Corporation with the approval of the Governor in Council. This rate can vary according to the interest rate on money borrowed by the Corporation, the operating costs of the Corporation and the allowance made for reserves against capital losses. The interest rate on the amount of loan under Part II exceeding $\$ 20,000$ and the amount under Part III exceeding $\$ 27,500$ is, at present, $6 \frac{2}{8}$ p.c. All loans are repayable on an amortized basis within a period not exceeding 30 years.

The Corporation has 127 field offices administered by 195 credit advisers who are responsible for informing local farmers about the services available, for pre-loan counselling on credit use, farm planning and farm management, for accepting applications and for making farm appraisals.

In addition to the amounts repaid by borrowers, funds for lending to farmers may be borrowed by the Corporation from the Minister of Finance. The aggregate amount of such borrowings outstanding at any time may not exceed 25 times the capital of the Corporation. This capital was raised by amendment to the Act in 1966 from $\$ 24,000,000$ to $\$ 40,000,000$. There were 52,932 loans to the amount of $\$ 586,356,486$ outstanding 2 s of Mar. 31, 1966.

## 2.-Loans Approved and Disbursed under the Canadian Farm Loan Act and the Farm Credit Act, Years Ended Mar. 31, 1957-68

Nome-Figures for earlier years are given in the corresponding table of previous Year Books beginning with the 1940 edition.

| Year Ended Mar. 31- | Loans Approved |  | Loans Paid Out | $\begin{gathered} \text { Year Ended } \\ \text { Mar. 31- } \end{gathered}$ | Loans Approved |  | Loans Paid Out |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \$ | \% |  | No. | \$ | \$ |
| 1957. | 2,921 | 13,978,700 | 13,183,992 | 1962........ | 5,885 | 88.574, 850 | 68.886, 875 |
| 1958 | 3.702 | 21.278,450 | 19,343,560 | 1963. | 7,438 | 90,924,300 | 78,428, 694 |
| 1959. | 4,805 | 30, 144,950 | 28.368,265 | 1964.... | 8,689 | 108.009, 100 | 96,315.635 |
| 1960 | 5,339 | 40.031,250 | 35,840. 882 | 1965..... | 10.142 | 154,813,900 | 139,750,639 |
| 1961. | 5.597 | 60,704,050 | 52,305,285 | 1968. | 11,238 | 208,984,900 | 201,687,642 |

- Repealed by the Farm Credit Act, proclaimed Oct. 5, 1959.
3.-Loans Approved under the Farm Credit Aet, by Province, Years Ended Mar, 31, 1964-66

Nore-Figures for earlier yeare are given in the corresponding table of previous Year Books beginning with the 1940 edition.

| Province | 1964 |  | 1965 |  | 1866 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \$ | No. | \$ | No. | \$ |
| Newrioundisad. | 5 | 68,600 | 3 | 55,700 | 2 | 45,700 |
| Prince Edward Island | 155 | 1,245,700 | 124 | 991,700 | 100 | 1.134,900 |
| Nova Seotia. | 74 | 821.800 | 77 | 964, 100 | 58 | 1,006.800 |
| Nem Branswic | 83 | 945,200 | 72 | 821,300 | 81 | 1.304.400 |
| Quebec. | 1,221 | 14,710.400 | 1,354 | 20,326,500 | 1.140 | 18.987,200 |
| Ontario. | 1,796 | 24,766,000 | 2,131 | 34,461,200 | 2,210 | 42.695.300 |
| Manitoba.. | 625 | 7,480, 800 | 691 | 9,176,200 | 899 | 14,879,500 |
| Saskatchewan | 2.332 | 25,200.900 | 2,601 | 35,570, 100 | 3,197 | 56,570.200 |
| Alberta. | 2,043 | 27,157,600 | 2,602 | 42,512,300 | 2,940 | 58,346,300 |
| British Columbia | 355 | 5,632,100 | ${ }^{487}$ | 9,934, 800 | 611 | 14,014,600 |
| Totals. | 8,68\% | 108, 000,100 | 10,142 | 154,813,800 | 11,238 | 208,384,300 |

Farm Machinery Syndicates Credit Act.-The Farm Machinery Syndicates Credit Act (SC 1964-65, c. 29, proclaimed Dec. 11, 1964) provides the Farm Credit Corporation with authority to make loans to qualified groups of farmers (referred to as syndicates) to purchase farm machinery to be used co-operatively and primarily on the syndicate members' farms. Under this Act, the Corporation may lend a syndicate up to 80 p.c. of the cost of the machinery to be purchased but loans outstanding to any syndieate may not exceed $\$ 15,000$ per member or $\$ 100,000$. Fuads for this purpose are advanced to the Corporation by the Minister of Finance.

To qualify for a loan a syndicate must have three or more members, all of whom are farming and the majority of whom have farming as their principal occupation. Loans are repayable over a term not exceeding seven years. Security is provided by a promissory note signed by each syndicate member and such other security as may be required.

The interest rate, set by the Corporation with the approval of the Governor in Council, is based on the cost of funds to the Corporation, the expenses in servicing loans and an allowance for a reasonable reserve against losses. The rate was set at 6 p.c. in December 1964. There is an initial service charge of 1 p.c. on the amount of each loan. The Corporation's field staff provide assistance to groups of farmers in making their local arrangements with respect to sharing in the use of the machinery and repayment of the loan. Up to Mar. 31, 1966, the Corporation had approved 136 loans totalling $\$ 988,893$.

Prairie Farm Assistance Act.-The Prairie Farm Assistance Act, passed in 1939, provides for direct money payments by the Federal Government on an acreage-and-yield basis to farmers in areas of low crop yield in the Prairie Provinces and in the Peace River area of British Columbia. Its purpose is to assist in dealing with a relief problem which the provinces and municipalities cannot do alone and to enable the farmers to put in a crop the following year. Payments for the $1965-66$ crop year, as at Mar. 31, 1966, totalled $\$ 4,760,236$; payments made under the Act since 1939 amounted to $\$ 357,510,068$.

Payments are made from the Prairie Farm Emergency Fund to which farmers contribute 1 p.c. of the value of all sales of wheat, oats, barley, rye, flaxseed and rapeseed. The additional funds required are provided from the federal treasury. The total collected through the 1-p.c. levy in the $1965-66$ crop year, as at Mar. 31, 1966, was $\$ 5,824,647$; the amount collected since 1939 was $\$ 168,467,081$.

Farmers operating land in the spring wheat area, and not covered by a federal-provincial crop insurance scheme, are eligible for awards. Crop failure and natural causes preventing seeding and summer fallowing are taken into account in making awards. These may not exceed $\$ 800$ in respect of any one farmer's total cultivated acreage.

Feed Grain Assistance.-The activities of the Feed Grain Administration of the Department of Forestry and Rural Development include the administration of a program respecting freight and storage assistance on western Canadian feed grains used for feeding livestock in Eastern Canada and British Columbia. Under the Feed Grain Assistance Regulations of the Appropriations Act, the original policy was initiated in October 1941 to enable eastern Canadian feeders of livestock and poultry to obtain western-grown feed grains at reduced cost so that livestock and poultry production could be maintained at a high level. This program has been amended over the years, particularly in the past two years with the introduction of a storage assistance program on winter supplies in Eastern Canada, the extension of freight assistance to truck movements of grain and feeds in Eastern Canada and the introduction of a zone system of payment. Orders in Council passed in 1965 and 1966 extended the payment of assistance to winter storage vessels at eastern ports, extended winter storage to storage facilities deemed as supplementary to licensed storage, and removed special winter rail assistance rates on shipments to the Maritime Provinces after the introduction of special water-competitive agreed charges by the railways.

During the year ended Mar. $31,1966, \$ 19,395,114$ was spent on the freight assistance program to move 2,465,972 tons of feed grains and millfeeds into Eastern Canada and British Columbia, and $\$ 1,173,259$ was spent on the payment of storage charges on western feed grains in store in elevators and vessels in Eastern Canada. Freight-assisted shipments, by province of destination, during the year ended Mar. 31, 1966 were:-

| Destination | Wheat | Oats | Barley | Screenings | Millfeeds | Total | Erpenditure |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | tons | tons | tous | tons | tons | tons | $\checkmark$ |
| Newfoundland | 10,065 | 5,844 | 7.343 | 2,145 | 6.164 | 30,562 | 758, 197 |
| Prince Edward Island. | 7,448 | 3,744 | 9,295 | 1,569 | 10,147 | 32,203 | 482,592 |
| Nova Scotia, | 59,597 | 25,518 | 30,711 | 7,255 | 36,318 | 159,399 | 2,075,262 |
| New Branswick | 18.544 | 15,138 | 14,141 | 5,292 | 28,195 | 81,310 | 1,158,724 |
| Quebec. | 218,669 | 319,509 | 336,545 | 28,034 | 266,967 | 1,173,874 | 9,310,598 |
| Ontario. | 129.438 | 237,626 | 225,447 | 52.478 | 150,756 | 806,6192 | 4,129,630 |
| British Columbia. | 70,578 | 43,301 | 91.524 | 4,847 | 30,953 | 243,122 | 2,115,313 |
| Totals, 1965-66. | 514,340 | 650,680 | 715,006 | 101,620 | 528,500 | 2,526,8894 | 20,028,316 |
| Totals, 1964-65. | 350,048 | 570,974 | 731,713 | 133,154 | 519,660 | 2,307,7385 | $\underline{18,349,293}$ |

[^150]
## Section 2.-Provincial Governments in Relation to Agriculture*

## Subsection 1.-Agricultural Services

Newfoundland.-Government agricultural services in Newfoundland are operated by the Agricultural Division of the Department of Mines, Agriculture and Resources. The Division is in charge of a director who is assisted by a staff of 49 officers. For purposes of administration, the province is divided into nine districts. A fieldman with permanent headquarters is located in each district except Labrador, where the officer is resident for the summer only. Officers in charge of different phases of agricultural development visit each district on assignments from the St. John's office.

Departmental policies in support of the agricultural industry include: a bonus of $\$ 125$ an acre on land cleared by privately owned equipment; the distribution of ground limestone at a subsidized rate; the payment of bonuses on purebred sires; and financial assistance to agricultural societies, marketing organizations and exhibition committees. An inspection service is provided for poultry products, vegetables and blueberries, production of the latter being encouraged by the burning of suitable berry areas and the improvement of roads and trails leading to them.

Every encouragement is given to the production of livestock. Poultry and beef production have increased with favourable marketing conditions and with departmental assistance and loans under the Provincial Farm Development Loan Act. The Provincial Veterinarian and his stafi supervise the health of animals program and the joint federalprovincial project for the eradication of bovine tuberculosis.

The Agricultural Division co-operates with the Department of Education in furthering the 4 -H Club movement in the province and accepts responsibility for all projects pertaining to agriculture.

Prince Edward Island.-The activities of the provincial Department of Agriculture are suggested by its staff which includes, in addition to the Minister and Deputy Minister, a dairy superintendent, three check testers, three dairy herd improvement promoters, a director of veterinary services and ten subsidized practising veterinarians, a livestock director, a marketing director, a director of extension, a horticulturist, a soil analysis assistant, a poultry fieldman, an economist, an agronomist, a director of 4-H Clubs, three agricultural representatives, a nursery supervisor, a forester, a farm improvement supervisor, and a director, an assistant director and two extension workers of Women's Institutes.

Nova Scotia.-The Department of Agriculture and Marketing endeavours to "help the people to help themselves" through strengthening member interest in such organizations as the Nova Scotia Federation of Agriculture, the Nova Scotia Fruit Growers' Association, various agricultural co-operative organizations, credit unions and producer and marketing organizations.

New Brunswick.-Provincial government agricultural policy and programs in New Brunswick are directed by the Department of Agriculture. The Department is headed by the Minister of Agriculture who is assisted by the Deputy Minister and the Directors of the following Branches: extension, livestock and dairy, veterinary, poultry, horticulture, field husbandry, potato and plant protection, agricultural engineering, home economics, credit union and co-operative, agricultural education and rural development.

Quebec.-The agricultural policy of Quebec is formed around the premise that the family farm remains the ideal basis of the rural social structure. To serve the interests of agriculture, the proviacial government, aided by various co-operative and professional associations, is working toward the improvement of agricultural production and marketing through the provision of farm credit, assistance to the farmer in organizing the collective commercialization of his products, the improvement of education and teaching facilities

[^151]for farmers, and the encouragement of agricultural research. In addition, aid is provided in the form of subsidies to the settler and farmer in handicapped rural areas for the construction of buildings, the acquiring of stock, land clearing and development, and the transportation of produce to market. Under the federal-provincial ARDA program, plans are under consideration for the better utilization of farm lands and, generally, the rational development of rural areas.

These services are administered through the Department of Agriculture and Colonization which operates under authority of a Minister, two Deputy Ministers and an Advisory Board, and comprises three Directorates and ten Services, the several divisions and branches of which deal with specific problems. Each Service is headed by a director general.

The Production and Marketing Service gives guidance to farmers in the best methods of producing and marketing dairy, animal, horticultural and forestry products and administers the co-operative movement. Co-operative associations for purchasing farm supplies and marketing farm products are particularly prevalent in the Province of Quebec.

The Research, Education and Information Service administers the Agricultural Research Council which was founded in 1947 to direct, co-ordinate and stimulate research work in agriculture; the results of such research are published in the annual review Recherches Agronomiques. This Service is also concerned with the dissemination of scientific information to farmers and the general public through the press, radio and publications; and with animal hygiene. Veterinary education (the School of Veterinary Medicine at St. Hyacinthe) and agricultural education (Institutes of Agricultural Technology at St. Hyacinthe and Ste. Anne de la Pocatière and fifteen intermediate schools), formerly under the Department of Agriculture and Colonization, are now under the administration of the Department of Education. Information intended to improve family life in general by the cultural enrichment of the farm woman is given through direct teaching, by means of the review Terre et Foyer, through local exhibitions and the Provincial Exbibition of Farm Women's Clubs.

The Rural Planning Service, through its four sections-economy, planning, development and utilization of land-is mainly concerned with the implementation of joint federalprovincial programs being conducted under the federal Agricultural and Rural Development Act (ARDA). The Colonization Service is occupied with the establishment of settlers, concessions of land and clearing of land. The Farm Planning and Extension Service is involved in the solving of problems of management and the promotion of agriculture at regional and county levels. Twenty-seven district offices co-ordinate the work of agronomists and specialists. Five-year agricultural contests are held in which the farmers of a parish or county take part, and an annual competition for the Agricultural Order of Merit brings into the limelight the most deserving farmers in each of the five regions into which the province is divided. The work of the Rural Engineering Service falls into three catego-ries-colonization roads, mechanized work and drainage work. The Administration Service deals with personnel, records and the purchasing and maintenance of materials and tools.

Also under the jurisdiction of the Department are the Farm Credit Bureau, the Quebec Sugar Refining Corporation (St. Hilaire) and the Agricultural Marketing Board.

Ontario.-The Ontario Department of Agriculture provides financial assistance and administrative services through its Head Office, 14 Branches and one Demonstration Farm, and through research conducted under the direction of the Ontario Research Institute as well as that under way at the Ontario Agricultural College, the Ontario Veterinary College, Macdonald Institute, Western Ontario Agricultural School, Kemptville Agricultural School and the Horticultural Experiment Station.

The administration of the Department is under the supervision of the Deputy Minister with the assistance of two Assistant Deputy Ministers. The Ontario Agricultural College, the Ontario Veterinary College and Maedonald Institute now form part of the University of Guelph. The Ontario Research Institute is the responsibility of the Director of Research
who, in turn, reports to the Deputy Minister. During I962 an office was established to develop programs under the federal Agricultural and Rural Development Act.

The Dairy Branch provides an inspection, instruction and supervision service to all dairy factories and promotes the production of clean milk on farms. The Milk Commission, functioning under the authority of the Milk Act, 1965, regulates and supervises the marketing of milk and cream. The Ontario Food Council, which operates as a separate Brauch, deals with the problems of marketing and merchandising Ontario's agricultural food products, and is also responsible for the market development program of the Department in an effort to increase markets at home and abroad.

Through a staff of agricultural representatives, one of whom is located in each county and district, the Extension Branch carries on an educational and extension service, and gives leadership to $4-\mathrm{H}$ Club work and to the Ontario Junior Farmers' Association. It also provides assistance to farmers and settlers in northern Ontario in connection with land clearing and breaking and improvement of farms and livestock. The Home Economics Branch gives leadership to organized activities of rural women. The Live Stock Branch promotes livestock improvement policies and gives support to purebred livestock associations. The Veterinary Services Branch administers the Community Sales Act, the Dead Animal Disposal Act, meat and livestock inspection and disease control, and provides diagnostic and extension services.

The Farm Economics, Co-operatives and Statistics Branch carries on research in farm business including cost analysis, marketing and land use; in co-operation with the Dominion Bureau of Statistics it gathers and publishes statistics of agricultural production; assists co-operatives to operate sound businesses under the control of their members and administers the Co-operatives Loans Act. The Agricultural and Horticultural Societies Branch provides assistance to agricultural and horticultural fairs and exhibitions, ploughing matches and other competitions and administers the Community Centres Act. A Demonstration Farm in northern Ontario at New Liskeard demonstrates production methods adaptable to that area, present emphasis being on beef cattle. The Soils and Crops Branch assists in the development of good cultural practices, promotes the use of improved strains of seed, works for the improvement of pastures and administers the Weed Control Act.

The Research Institute co-ordinates all research activities of the province's agricultural schools and colleges in addition to developing a thorough research program in the interests of agriculture and industry associated with agriculture.

Manitoba.-The Department of Agriculture and Conservation serves Manitoba through the following branches.

The Extension Service deals with agricultural engineering, entomology and beekeeping, radio, TV and information, 4-H Clubs and women's work, and has specialists devoting attention to these subjects. Meetings, field days, and short courses are held; 37 agricultural representatives and six assistants are located in 35 offices in the province, each serving from one to five municipalities; and 14 home economists serve designated areas.

The Animal Industry Branch develops and administers policies that encourage the improvement and efficient production of different classes of livestock, including poultry; supervises the grading of cream and inspects dairy manufacturing plants. Several Acts to promote high-quality products for consumer protection are administered in close cooperation with federal departments.

The Soils and Crops Branch encourages the development, production and improvement of cereal, forage, horticulture and special crops and promotes proper land use through soil conservation programs. The Branch develops and administers policies that encourage good field crop husbandry, soil conservation and weed control.

The Economics and Publications Branch deals with agricultural economics, supervises the farm business clubs and publishes and distributes annually approximately 250,000 bulletins, circulars, posters, leaflets, etc. The Publications section publishes agricultural statistics and maintains an agriculture reference library.

The Co-operative Services Branch registers and supervises co-operatives and credit unions and administers the Acts governing them. It also collects and compiles statistics on co-operative activity throughout the province.

The Veterinary Services Branch provides a diagnostic laboratory for animal diseases; administers the brucellosis control program, the Veterinary Services District Act and the Veterinary Science Scholarship Fund Act; works in close co-operation with practising veterinarians and the federal Health of Animals Branch in the control of livestock and poultry diseases.

The Water Control and Conservation Branch administers, through the Water Rights and the Water Power Acts, the water resources of the province and all works in connection with the control and utilization of those resources. The Departmental Act and associated statutes provide for the construction of works to control and use water, and for technical and financial assistance to local governments for the construction, maintenance and operation of such works. The Floodway Division is responsible for co-ordinating all matters respecting design and construction of the Red River Floodway.

Saskatchewan.-The Saskatchewan Department of Agriculture is organized in the following branches and services.

The Agricultural Representative Branch has a technical staff of 55, which serves all branches of the Department as well as the other agencies operating within the Co-operative Agricultural Extension Program. Agricultural representatives are active in all federal, provincial and university farm services; they work through Agricultural Conservation and Improvement Committees in each rural municipality and local improvement district to supply the farmer with scientific and practical information and to develop district improvement programs. The Department pays one half the cost of local group development projects. In farm labour matters, co-operation is maintained with the federal Departments of Manpower and Immigration and of Labour.

Animal Industry Branch specialists provide technical information to livestock producers and administer the record of performance program for beef cattle. The Dairy Division of the Branch administers dairy herd improvement programs, assists producers with management and production problems, inspects and licenses dairy manufacturing and frozen-food locker plants, and administers dairy, locker plant and margarine legislation; the Livestock Division encourages the use of suitable animals for breeding purposes by the establishment of purebred sire areas and by assistance in the purchase and distribution of bulls, boars and rams, and registers brands, licenses livestock dealers and aqents and promotes programs on insect control, feeding and management; the Poultry Division maintains poultry testing and banding services, licenses produce dealers and buyers, hatcheries and hatchery agents, and otherwise promotes flock improvement; the Veterinary Division assists students in veterinary science under a scholarship plan, administers the Veterinary Service District Act and the calfhood vaccination program, provides a laboratory service for the livestock and poultry industries and co-operates with Federal Government officials and local veterinarians in disease prevention and control.

The Conservation and Development Branch provides engineering services for irrigation development, usually in co-operation with the Federal Government, and for drainage programs and water utilization and control projects. Land reclamation and development and the construction of provincial community pastures also come within its jurisdiction.

The Lands Branch administers Crown land, except forest reserves and parks in settled areas; classifies it according to the use for which it is best suited; disposes of such land under long-term leases; secures land control for land utilization projects; supervises new settlement projects; pays for clearing and breaking by farmers on provincial leases; and operates provincial community pastures.

The Plant Industry Branch conducts grassland improvement programs and programs for crop improvement and protection, and gives advice on soil conservation, horticultural problems, and weed and pest control. The Apiary Division advises on beekeeping and honey production and conducts continuous inspection.

Farmers are assisted by the Family Farm Improvement Branch which gives technical advice at the farm on the construction of farm buildings and on farmstead planning, mechanization and materials handling. The Branch conducts research for farm water and sewage works.

The Economics and Statistics Branch undertakes research and investigations required to formulate and evaluate policies and programs that will ensure a high level of growth and efficiency in Saskatchewan's agriculture; it collects, analyses and distributes economic information and principles to assist people interested in or engaged in agricultural pursuits. Data on crop conditions, production, marketings and income are available from the Statistics Division. Farm information is dispensed daily over private radio stations, over TV stations and to the press by the Information Division.

Alberta.-The Alberta Department of Agriculture has seven Divisions. The Plant Industry Division administers programs and policies relating to crop improvement; crop protection and pest control; soils and soil conservation; weed control; horticulture; apiculture and special projects. A crop diagnostic service is offered through a Crop Clinic at Edmonton and horticultural services at a Horticultural Station at Brooks; a Tree Nursery at Oliver provides trees for farm planting.

The Animal Industry Division administers legislation, policies and programs in the broad area of livestock, dairy and poultry production and in processing and marketing, including: setting standards for and approving public sales of sires; sire purchase assistance; ROP programs for beef cattle, swine and sheep; extension programs for all classes of stock; administering standards and qualifications for the artificial insemination (AI) industry; supervising feeder associations; brand registration and inspection; licensing of butchers, livestock dealers, stockyards and AI technicians; pound districts and sale of horned cattle. The testing, grading and purchasing of raw produce by all dairy plants are under regulation, as are standards of construction, manufacture, processing, sanitation and temperature control for dairy and frozen-food plants. A regular cow-testing service to provide the basis for breeding, feeding and culling dairy cattle is available to dairy producers, and chemical and bacteriological analyses are conducted for industrial directives. Licences are issued to poultry hatcheries, wholesalers, first receivers and truckers and programs are conducted for control of pullorum-typhoid diseases of chicken and turkey hatching egg supply flocks; extension programs, cost studies, disease tests and surveys, and research projects with respect to poultry are also carried out.

The Veterinary Services Division provides diagnoses of livestock and poultry diseases and conducts investigations of disease conditions; provides lecture services for the University of Alberta and for other groups; promotes policies aimed at reducing losses such as brucellosis control, stockyard inspection, swine health programs, mastitis, etc.; and administers the licensing and exporting of live fur bearing animals and pelts and assists fur farmers in care, management and stock improvement.

The Extension Branch of the Agricultural Extension and Colleges Division operates 49 offices and employs 64 district agriculturists and 23 district home economists who supply information and guidance to farm families and promote progressive agricultural or home-making policies and programs; the program for 5264 -H Clubs with 1,917 adult leaders is administered; two headquarters engineers and five regional engineers assist farm families with engineering problems; five broadcasts are conducted each week over ten radio stations and weekly bulletins are issued to radio and the press; and publications are supplied to the rural public and visual aids to department staff members. Agricultural and vocational colleges are operated at Olds, Vermilion and Fairview, all three offering five courses in agriculture-a general course, or majors in plant science, animal science, agricultural mechanics and farm management; a complete business course; and a short course in land appraisal and assessment. Special courses include horticulture, fashion and design, irrigation technology at Olds; home economics and AI technician training at Vermilion; and motor mechanics and welding at Fairview.

The Agricultural Economics Division provides extension information on farm management, credit and marketing to aid farmers in instituting good business practices on the
farm; collects, analyses and disseminates agricultural statistics in collaboration with the Dominion Bureau of Statistics; conducts studies on farm production costs and returns, marketing, and resource and rural development; and provides advisory assistance on economic matters to government departments, the agricultural industry and farm groups. Credit is made available to farmers for the purchase of land under the Farm Purchase Credit Act and for home improvements under the Farm Home Improvement Act.

The Water Resources Division administers legislation involving the use of water by individuals or organizations within Alberta and adjoining provinces. Division engineers construct drainage, irrigation, water supply, river control and erosion control projects when it is in the public interest to do so, and staff agrologists are concerned with land levelling for irrigation purposes, assisting settiers, etc. Alberta's large-scale water conservation and utilization program is a direct responsibility of the Division.

The Department also has a Program Development Division which administers the provincial ARDA program, the lands and forest land utilization program, research liaison with the University of Alberta, agricultural liaison on water resource development, trusteeship of the Lethbridge Northern and United Irrigation Districts, provides agricultural representation on the Highways Traffic Board, etc. The Agricultural Products Marketing Council establishes and regulates marketing boards and commissions which assist in the marketing of agricultural products. A new policy is being developed for the administration, operation, maintenance and reconstruction of irrigation projects and districts in the province.

British Columbia.-The Department of Agriculture has four main branches. The Administrative Branch is responsible for the general direction of agricultural policies, the administration of legislation affecting agriculture and the compilation of reports and publications. This Branch also maintains direct supervision of the Field Crops, Soil Survey, Plant Pathology, Entomology, Apiary, Markets and Statistics, Farmers' Institutes and Women's Institutes Branches.

The Livestock Branch engages in the promotion and supervision of the livestock industry and provides veterinary services affecting disease control regulations; its work also includes supervision of stock brands, inspection of dairy and fur farm premises, and inspection of licensed abattoirs too small to qualify for federal inspection services. In addition, the Branch supervises the operations of the Dairy Branch in the inspection of commercial dairy premises, dairy farms and the laboratory testing of fluid milk. Officials are stationed at 11 centres throughout the province. The Poultry Branch offers extension services to the poultry industry.

The Horticulture Branch supervises fruit, vegetable and seed production, and provides advice on plant diseases and insect pest control. The Branch maintains field offices at nine points in the southern section of the province.

The Agricultural Development and Extension Branch offers general information services to farmers through 17 offices which cover all major farming districts. In addition, this Branch provides agricultural engineering service, supervision of the government landclearing program and farm labour services, and promotes junior club projects.

## Subsection 2.-Agricultural Schools, Colleges and Universities

All of the provinces of Central and Western Canada have agricultural colleges in association with universities that give courses leading to degrees in agricultural science and home economics and also provide postgraduate courses; Ontario, Quebec and Saskatchewan have veterinary colleges. In addition, all of these provinces have schools of agriculture or diploma courses that provide basic training for young people intending to return to farms or interested in employment in businesses allied with agriculture.

In the Maritime Provinces, training in scientific agriculture is available at colleges in Prince Edward Island and Nova Scotia where courses leading to third-year admission to degree courses elsewhere are given. Vocational and short courses are available in all three provinces. All colleges of agriculture engage in research and extension activities.

## Section 3.-Statistics of Agriculture*

The collection, compilation and publication of statistics relating to agriculture is a responsibility of the Dominion Bureau of Statistics. Valuable information is obtained through the Censuses of Canada, through partial-coverage mailed questionnaire surveys and from the administrative records of government operations. Because preliminary results of the Census of Agriculture taken June 1, 1966 will be available by April-June 1967 and final results by the end of the year, Section 4 of this Chapter, which normally summarizes the latest census data, contains only basic 1961 data (see p. 503).

The Bureau collects and publishes primary and secondary statistics of agriculture on an annual and monthly basis. The primary statistics relate mainly to the reporting of crop conditions, crop and livestock estimates, wages of farm labour and prices received by farmers for their products. The secondary statistics relate to farm income and expenditure, per capita food consumption, marketing of grain and livestock, dairying, milling and sugar industries and cold storage holdings. In the collection of annual and monthly statistics, the Canada Department of Agriculture and various provincial departments, as well as such agencies as the Board of Grain Commissioners and the Canadian Wheat Board, contribute statistical data to the Bureau and aid directly in DBS survey work. Many thousands of farmers throughout Canada send in reports voluntarily and dealers and processors also provide much valuable data. The figures contained in this Section do not include estimates for Newfoundland; agriculture plays a relatively minor part in Newfoundland's economy and commercial production of most agricultural products is quite small. In the following Subsections, details are given for 1965 with earlier comparisons; figures for the latest year are subject to revision and it should be noted that many of those given for earlier years have been revised since the publication of the 1966 Year Book.

## Subsection 1.-Income from Farming Operations

Cash Receipts from Farming Operations.-Estimates of cash receipts from farming operations include data concerning cash receipts from the sale of farm products, Canadian Wheat Board participation payments on previous years' grain crops, net cash advances on farm-stored grains in Western Canada, defciency payments made by the Agricultural Stabilization Board, and supplementary payments. Farm cash receipts from the sale of farm products include the returns from all sales of agricultural products except those associated with direct inter-farm transfers. The prices used to value all products sold are prices to farmers at the farm level; they include any subsidies, bonuses and premiums that can be attributed to specific products but do not include storage, transportation, processing and handling charges which are not actually received by farmers.

The DBS has recently revised its estimates of farm cash receipts from farming operations back to 1940. These revisions were based on the most up-to-date information from private and government sources including the Censuses of Agriculture and the 1958 farm expenditure and income survey. They also reflect changes in methods of calculation.

Total cash receipts from farming operations for 1965 , excluding supplementary payments, are estimated at $\$ 3,775,800,000$ for Canada, excluding Newfoundland; this estimate is a record high and exceeds by 8.2 p.c. the previous bigh of $\$ 3,488,200,000$ established in 1964. The most important contribution to the increase was made by cattle and calves; lesser increases of varying amounts also occurred in the case of hogs, poultry products, dairy products, potatoes, rapeseed, barley, and Canadian Wheat Board participation payments. The most important offset to these gains was a substantial reduction in cash receipts from the sale of wheat; much less significant reductions were recorded for flaxseed, soybeans, fruits and tobacco. Increases in cash receipts occurred in all provinces, the gains ranging from about 5 p.c. in Saskatchewan and British Columbia to just over 27 p.c. in Prince Edward Island.

[^152]

Supplementary payments to farmers in 1965 totalled $\$ 28,300,000$ as against $\$ 8,500,000$ in 1964. The total for 1964 consisted entirely of payments made under the provisions of the Prairie Farm Assistance Act,* whereas in 1965 these payments included, in addition to PFAA payments, supplementary payments of $\$ 16,900,000$ made by the Federal Government to eligible milk and cream producers. Farm cash receipts from farming operations and total supplementary payments together amounted to $\$ 3,804,100,000$, about 9 p.c. above the previous record of $\$ 3,496,700,000$ in 1964.

Field Crops.-Farmers' returns from the sale of field crops plus cash advances on farm-stored grains in Western Canada and Canadian Wheat Board payments amounted to $\$ 1,635,200,000$ in 1965 , only slightly above the 1964 figure of $\$ 1,600,400,000$. The 1965 estimate of returns accounted for about 43 p.c. of farmers' total cash receipts from farming operations, whereas a year earlier it represented about 46 p.c.

The maintenance of this level of returns from field crops in 1965 can be attributed for the most part to a substantial increase in Canadian Wheat Board participation payments on previous years' grain crops, larger net cash advances on farm-stored grains and higher cash receipts from potatoes, rapeseed and barley; total participation payments at $\$ 296,800,000$ were $\$ 72,300,000$ higher than in 1964 . The 1965 payments represented final payments on the marketings of the 1963 crops of wheat, oats and barley of 48.2 cents, 9.8 cents and 22.6 cents per bu., respectively. Total returns to potato growers, at $\$ 104,300,000$, were approximately 61 p.c. above the 1964 estimate as a result of a very substantial increase in prices, and the higher receipts from the sale of barley and rapeseed reflect increased marketings. Offsetting these gains to a considerable extent were lower cash receipts from wheat, flaxseed, soybeans, fruits and tobacco, due for the most part to lower marketings. Wheat showed the most significant decline, total receipts dropping to $\$ 658,900,000$ from $\$ 738,600,000$ in 1964.

[^153]Livestock and Livestock Producls.- Cash receipts to producers of livestock and livestock products amounted to $\$ 2,101,100,000$ in 1965 , about 13 p.c. above the level of 1964 . Increases in both prices and marketings moved returns from cattle and calves sharply upward from $\$ 640,500,000$ to $\$ 772,700,000$, a gain of almost 21 p.c., and a substantial increase in average hog prices far more than offset some reduction in marketing to give cash receipts from this source of $\$ 378,700,000$, nearly 18 p.c. above 1964 .

Producers of poultry products received about 10 p.c. more cash in 1965 than in 1964. Higher average prices for eggs more than compensated for a slight decrease in production and both higher prices and production of poultry meat contributed to the higher return. Output of dairy products was down fractionally but higher prices brought the return up to $\$ 556,400,000$ from $\$ 533,900,000$ a year earlier; in addition, eligible producers of milk and cream received $\$ 16,900,000$ in the form of supplementary payments.

## 4.-Cash Receipts from Farming Operations, 1962-65

| Item | 1962 | 1963 | 1961 | 1965 |
| :---: | :---: | :---: | :---: | :---: |
|  | \$000 | ${ }^{\prime} 000$ | \% 000 | \$'000 |
| Grains, Seeds and Hay. | 982,884 | 947,851 | 1,199,106 | 1,214,502 |
| Wheat. | 525,884 | 597,705 | 738, 552 | 658,902 |
| Wheat participatiou payments. | 152,523 | 123,968 | 199.744 | 271,974 |
|  | 33,177 | 45,420 | 33, 200 | 31.729 |
| Oats participation paymenta | 4,301 | -7700 | 10, 773 | 4.707 |
| Barley... | 52,540 | 67,807 | 72,137 | 73,836 |
| Barley participation payments. | 24,244 |  | 14,092 | 20.093 |
| Canadian Wheat Board net cash advance paymente. | 5,916 | 11,203 | -12,123 | 5,997 |
| Rye. | 8,581 | 7.893 | 8.030 | 9.448 |
| Rapeseed. | 18.510 | 37,320 | 60, 947 | 47,295 |
| Soybeans. | 14,906 | 13, 463 | 19,091 | 14,329 |
| Cora. | 11.748 | 16,382 | 23,536 | 28,174 |
| Clover and grasa seed. | 10,367 | 15,060 | 13,264 | 16,245 |
| Vegetables and Other Field Crops. | 231,024 | 263,082 | 261,644 | 287,282 |
| Potatoes. | 45,932 | 49,882 | 64,753 | 104.299 |
| Vegetables | 75,126 | 74, 108 | 79.362 | 81,844 |
| Sugar beets | 13,706 | 26.138 | 19.891 | 12,005 |
| Tobacco. | 96, 260 | 112,954 | 97.638 | 89, 134 |
| Lesestock and Poultry | 1,133,620 | 1,116,718 | 1,144,655 | 1,352,887 |
| Catule and calvea, | 857.400 | 631.495 | 840,507 | 772,723 |
| Sbeep and Lambs. | 10.681 | 9,715 | 9.419 | 9.302 |
| Hogs | 312.221 | 306.646 | 321.574 | 378.746 |
| Poultry. | 153,318 | 168, 862 | 173,155 | 192,061 |
| Dairy Produets. | 498,576 | 509,803 | 533,320 | 554,371 |
| Frults. | 58,355 | 66,433 | 73,491 | 63,551 |
| Other Printipal Farm Products | 158,836 | 168,255 | 148,085 | 163,5*5 |
| Eggs | 141,601 | 148.381 | 132,566 | 145,000 |
| Wool. | I, 820 | 1.960 | 1,999 | 1,551 |
| Money......... | 5,204 | 7.330 | 6.874 | 7,933 |
| , | 10,211 | 10.684 | 6,850 | 9,041 |
| Miscellaneous Farm Products. | *8,987 | 77,688 | 80,221 | 85,714 |
| Forest Products. | 25,676 | 25,072 | 24,573 | 21,056 |
| For Farming. | 19,351 | 21,776 | 30,530 | 21,500 |
| Deficiency Paymento - |  |  |  |  |
| Egag....... | 577 | 59 | 867 | 1.838 |
| Sugar beets. | 733 | 1,251 | 0 | 4,033 |
| Wool.,.. | 1.212 | 964 | 692 | 546 |
| Totals, Cash Recelpts from Farming Operations... | 3,101,788 | 3,138,853 | 3,488,188 | 3,775,750 |
| Supplementary Payments- <br> Praitie Farm Assistsnce Act |  |  |  |  |
| Daisy | 70,313 | 14,769 | 8,477 | $\begin{aligned} & 11,433 \\ & 1 \end{aligned}$ |
| Totals, Cash Recelpts. | 3,172,101 | 3,213,722 | 3,436,645 | 3,804,095 |

## 5.-Cash Receipts from Farming Operations, by Province, 1962- $\mathbf{6 5}$

| Province | 1962 | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: |
|  | \$000 | $\$ 000$ | \$000 | \$000 |
| Prince Edward Island. | 24,284 | 25,223 | 31,654 | 40,259 |
| Nova Scotia. | 46,792 | 47,805 | 46. 455 | 50,585 |
| New Brunswick. | 40.913 | 40,867 | 47.372 | 59,434 |
| Quebec. | 442,218 | 454.417 | 458,212 | 306,569 |
| Ontario.. | 924, 198 | 997.793 | 1,020,370 | 1,091,712 |
| Manitoba | 249,764 | 268,459 | 297, 517 | -337, 392 |
| Saskstchewan. | 873,004 | 692,013 | $838+254$ | 878,940 |
| Alberta. | 552,394 | 523,074 | 597,453 | 650, 563 |
| British Columbia | 148,220 | 149.502 | 152,901 | 160,296 |
| Totals | 3,101,788 | 3,198,353 | 3,488,188 | 3,775,750 |

Net Income of Farm Operators from Farming Operations.-Two diferent estimates of net income from farming operations are prepared by the Agriculture Division. One is called realized net income and is obtained by adding together cash income from farming operations, supplementary payments and the value of income in kind, and deducting farm operating expenses and depreciation charges. This estimate of farm net income represents the amount of income from farming that operators have left for family living or investment after provision has been made for operating expenses and depreciation charges. The second estimate is referred to as total net income and is obtained by adjusting realized net income to take into account changes occurring in inventories of livestock and stocks of grains on farms between the beginning and the end of the year. The latter estimate is the one used to calculate the contribution of agriculture to national income.

Realized farm net income reached an estimated $\$ 1,595,800,000$ in 1965 , an amount 13.4 p.c. above the 1964 estimate of $\$ 1,407,800,000$ and 27.6 p.c. higher than the average of $\$ 1,250,700,000$ for the five-year period 1960-64. Although farm operating expenses and depreciation charges moved up 6.3 p.c. during 1965 , this increase was more than offiset by higher total receipts from the sale of farm products, supplementary payments and income in kind. Changes from 1964 to 1965 in these items are covered in Table 6. Income in kind, which is the value of the farm consumption of home-produced farm products plus an imputed rental value of the farm dwelling, totalled $\$ 432,800,000$ in 1965 compared with $\$ 396,400,000$ in the previous year, an advance accounted for by an increase in the value of consumption of meat, poultry products, fruits and vegetables and a higher imputed rental value for the farm dwellings.

All items considered in estimating farm operating expenses were higher in 1965 than in 1964. For the third consecutive year, fertilizer accounted for the greatest percentage increase in outlay, reflecting a combination of higher prices and increased consumption. In absolute terms, the most important gain was recorded for feed, the result of substantially increased quantities purchased through commercial channels. Expenditures for hired help continued to rise as wages climbed and increasing use of credit was reflected in a steady rise in farmers' interest payments. Farm land rental payments were up substantially, mainly as a result of the higher share-rental payments arising out of larger crop production in Saskatchewan and Alberta. The steady year-to-year rise in the allowance for depreciation, which was extended into 1965, reflects the continued expansion of mechanization on Canadian farms.

Total farm net income, estimated at $\$ 1,660,300,000$ in 1965 , was 26.4 p.c. above the 1964 level of $\$ 1,313,200,000$ and 29.0 p.c. above the 1960-64 average. Farm inventories of grains in the Prairie Provinces increased substantially between the beginning and the end of the year as a result of a high level of production; this, together with an increased year-end carryover of tobacco, more than offset some decline in livestock numbers.

# 6.-Net Income of Farm Operators from Farming Operations, by Item and by Province, 1962-65 

(Excluaive of Newfoundland)
Nort,--Includes estimated rental value of farm bomes, supplementary paymente made under the provisions of the Prairie Farm Asgistance Act and payments under the Western Grain Producers' Acreage Payment Regulations.

| Item and Province | 1982 | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: |
|  | \$000 | \$'000 | \$000 | \$000 |
| Item |  |  |  |  |
| 1. Casb receipts from larming operations.. | 3,101.788 | 3,198,953 | 3,488,188 | 3,775,750 |
| 2. Incomi in kind........................ | 360.189 | 375,070 | 396,431 | 432.839 |
| 3. Supplementary payments...... | 70,313 $3,532,290$ | 3.588.769 | 8.477 3.893 | 26,345 4 |
| 6. Opemating and depreciation charges.... | 2,228, 152 | $2.377,044$ | 2,485,311 | 2,641.140 |
| 6. Realized net income (Items 4-5) | 1.304,138 | 1,211,748 | 1, 407,785 | 1.595.794 |
| 7. Value of inventory changes. | 187,498 | 289.942 | -94.587 | 64.496 |
| 8. Total gross income (Iteus 4+7) | 3,719,788 | 3,878,734 | 3.798,509 | 4,301.430 |
| Totals, Net lincome (Items 8-5) | 1,491,636 | 1,501,684 | 1,313,188 | 1,6ce,2s\% |
| Province |  |  |  |  |
| Prince Edward Istand. | 6,726 +8.512 | 7,827 18.525 | 12, 817 | 15.268 |
| Noys Sootia | 18,512 | 18,525 | 16.120 16.875 | 18.418 21.920 |
| Quebec... | 161.313 | 146, 200 | 139,853 | 161,959 |
| Ontario. | 337,883 | 315,059 | 314,115 | 369,076 |
| Manitoba. | 162,146 | 106,932 | 156,755 | 164. 628 |
| Saskatchewan. | 453,503 | 541,485 | 338,448 | 527,594 |
| Alberta......... | 270.471 | 285, 161 | 247,175 | 312,408 |
| Britigh Colnmbis. | 69,331 | 69.458 | 71,040 | 68.019 |

## Subsection 2.-Volume of Agricultural Production

The index of physical volume of agricultural production for Canada established a high of 166.3 in $1965(1949=100)$, a point 9.8 p.c. above the estimate for 1964 and 2 . I p.c. above the previous record set in 1963. The increase in 1965 over 1964 can be attributed for the most part to a higher production of grains, cattle and poultry meat which more than offset a reduction in the output of hogs. The index was higher than in 1964 for all provinces except Prince Edward Island and New Brunswick. In Prince Edward Island, a lower production of potatoes and eggs more than outweighed moderate increases in cattle and hogs. In New Brunswiek, lower production of potatoes and a cut in the output of hogs and eggs more than offset an increase in poultry meat.

In the Prairie Provinces the substantial increases reflected larger grain crops and higher cattle production which more than compensated for some reduction in hogs and poultry products; in Quebec, production of cattle, hogs and potatoes was down but poultry products and fruits were up; in Ontario, production was up for all commodities except calves, hoge, eggs and fruits; in Nova Scotia the over-all increase was attributable mainly to a higher output of poultry products and fruits; in British Columbia, potatoes, cattie and poultry products were up but not quite enough to offset decreases in hogs and fruits.

The index of physical volume of agricultural production is a measure of unduplicated gross farm production. In its construction, provision has been made to avoid double counting of farm output. Within a province, such double counting occurs when feed grains, credited to field crop production, are fed to livestock, and appear later as livestock and livestock products. Interprovincially, this duplication occurs when feed grains produced in one province are Ied in another, and when feeder cattle raised in one section of the country are shipped to another for finishing.

## 7.-Index Numbers of Physical Volume of Agricultural Production, by Province, 195b-65

( $1949=100$. Exclusive of Newfoundland)
Nors.-For a description of the index, raetboda and coverage, see DBS publication Index of Farm Production 1962 (Catalogue No. 21-203).

| Year | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1956. | 101.2 | 115.5 | 103.2 | 127.2 | 113.9 | 132.2 | 134.1 | 165.3 | 113.7 | 140.3 |
| 1957. | 107.9 | 113.9 | 88.1 | 128.0 | 118.9 | 106.8 | 119.7 | 133.8 | 118.9 | 120.8 |
| 1958. | 106.2 | 110.8 | 94.5 | 133.8 | 132.4 | 127.1 | 117.8 | 150.0 | 123.2 | 129.9 |
| 1959. | 97.7 | 116.7 | 91.8 | 134.3 | 125.3 | 122.8 | 124.9 | 153.7 | 128.8 | 129.8 |
| 1980. | 98.5 | 117.0 | 96.8 | 134.5 | 128.7 | 126.2 | 162.3 | 150.4 | 131.8 | 138.7 |
| 1961. | 99.0 | 123.2 | 99.4 | 544.9 | 137.6 | 88.2 | 79.5 | 149.5 | 144.4 | 122.0 |
| 1962. | 99.7 | 124.5 | 94.5 | 151.8 | 142.1 | 149.6 | 166.1 | 160.8 | 152.3 | 150.9 |
| 1963. | 97.8 | 127.6 | 95.2 | 150.4 | 141.0 | 128.4 | 219.4 | 181.9 | 150.4 | 162.9 |
| 1984. | 103.5 | 125.5 | 97.6 | 149.2 | 144.0 | 155.7 | 151.1 | 176.4 | 160.3 | 151.5 |
| 1965 | 100.6 | 128.2 | 97.1 | 152.9 | 149.8 | 166.8 | 191.7 | 194.1 | 160.5 | 166.3 |

## Subsection 3.-Field Crops*

Extremes in weather characterized crop-growing conditions throughout much of Canada during the 1965 season. In the Prairie Provinces seeding was delayed and early growth slowed by generally cool weather but crops developed rapidly during the hot, dry weather that prevailed in Iate July and early August. However, wheat leaf and stem rusts present over wider than normal areas, combined with very hot weather near the end of the growing season and wet weather that interrupted harvesting, reduced the yield somewhat and caused some losses in grade.

In Central and Eastern Canada, there was a shortage of moisture during the early and mid-portion of the growing season resulting in poor pasture conditions, below-normal yields of hay and generally lowered yield prospects of most crops. However, late summer rains and cool weather encouraged development of most crops in Ontario and Quebec and, despite some delay in maturity, most cereal crop outturns were good. Wet conditions over much of the Maritimes created harvesting difficulties which lowered yields and caused some crop losses in northern areas.

In British Columbia, growing conditions were generally favourable. After a dry midseason, showers benefited vegetable and later-maturing crops. In the Peace River area of the province grain prospects toward the end of the growing period were fair to good despite late plantings followed by early-season frost damage.

The 1965 index of field crop production for Canada $(1949=100)$, placed at 174.4, was well above the 1964 level of 155.3 but slightly below the 1963 record of 176.5 . Manitoba's index reached 170.1, exceeding the previous high of 159.4 established in 1964; Saskatchewan's index, at 212.2, was the third highest for that province, well above the 166.3 reached in 1964 but short of the all-time high of 249.5 in 1963; Alberta's index, at 218.8 , was well above the 1964 figure of 186.3 and also above the 1963 next-to-record level of 205.9; and British Columbia's index reached a record 133.4 compared with 132.1 a year earlier. Ontario's record corn and soybean crops helped to maintain its production index at 144.0, compared with the all-time high of 146.1 reached in 1964, but Quebec's index, at 92.8 , was much below the 122.2 of the previous year. The 1965 indexes for Prince Edward Island, Nova Scotia and New Brunswick, at 77.8, 58.9 and 78.9, respectively, were each down from comparable levels of the previous year.

Canada's 1965 wheat crop amounted to $648,917,000$ bu., some 8 p.c. above the previous year's $600,424,000 \mathrm{bu}$. and 37 p.c. greater than the ten-year (1954-63) average of $475,100,000$ bu. Average yield per acre was up by about 13 p.c., more than offsetting a 5 -p.c. decline in seeded acreage. The average protein content of the 1965 crop of hard red spring wheat was 13.5 p.c., compared with 14.9 p.c. in 1964 and with an average of 13.6 p.c. for the period 1927-64.

[^154]Supplies of Canadian feed grains (corn, oats, barley, mixed grains and buckwheat) in the crop year 1965-66 were 5 p.e. above the previous crop year, reflecting increased production of most feed grains which more than offset generally lower carryover stocks compared with the previous year. Compared with 1964-65, supplies of oats (Aug. I, 1965 carryover of $130,100,000 \mathrm{bu}$. plus the 1965 production of $415,000,000 \mathrm{bu}$.) were up about 2 p.c.; supplies of barley (carryover of $88,800,000 \mathrm{bu}$. plus a crop of $214,600,000 \mathrm{bu}$.) were up 7 p.c.; and supplies of rye (totalling $25,000,000$ bu.) were up 29 p.c. The 1965 record crop of mixed grains at $74,200,000$ bu. was up from the $66,400,000 \mathrm{bu}$. of 1964 and production of grain corn was at an all-time high of $59,600,000 \mathrm{bu}$. Net feed grain supplies (total supplies less estimated exports, seed requirements and human food and industrial requirements) amounted to $18,100,000$ tons, some 7 p.c. above the $1964-65$ total of $16,900,000$ tons and 13 p.c. above the ten-year ( $1954-63$ ) average of $16,100,000$ tons.

There were $21,099,000$ tons of tame hay produced in 1965 , l p.e. less than in 1964, but the $5,161,000$ tons of fodder corn produced was 4 p.e. higher than in the previous year. Sigaificant production increases occurred in 1965 for all oilseed crops except sunflower seed; soybeans and flaxseed were above, rapeseed almost double and mustard seed almost triple the 1964 quantities. Potato production in 1965 at $46,472,000 \mathrm{cwt}$. was down 3 p.c. from 1964. New Brunswick was the highest producer with an output of $11,280,000 \mathrm{cwt}$. followed by Ontario, Prince Edward Island and Quebec with $10,584,000 \mathrm{cwt}$., $7,341,000 \mathrm{cwt}$. and $7,239,000 \mathrm{cwt}$., respectively. The 1965 field root crop at 294,000 tons and the sugar beet crop at $1,142,341$ tons were both lower than in 1964, owing mainly to the smaller acreage planted.
8.-Acreages, Yields and Priees of Principal Field Crops 1961-65, with Average for 1955-55
(Exelusive of Newfoundland)

| Crop and <br> Yesr | Area | Yield per Acre | Production | $\begin{aligned} & \text { A ver } \\ & \text { age } \\ & \text { Price } \end{aligned}$ | Total Valuel | Crop <br> Year | Area | Yield per Acre | Production | Average Price | Total Valuel |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { '000 } \\ & \text { acres } \end{aligned}$ | bu. | '000 | $\begin{aligned} & \text { per } \\ & \text { but } \end{aligned}$ | \$'000 |  | $\begin{gathered} 0000 \\ \text { acres } \end{gathered}$ | bu. | '000 | $\begin{aligned} & \text { \$per } \\ & \text { bu. } \end{aligned}$ | \$'000 |
| Wheat- |  |  |  |  |  | Mixed |  |  |  |  |  |
| Av. 1955-58 | 22.730 | 20.5 | 465, 618 | I. 31 | 608,018 | Av. 1985-59 | 1,513 | 42.8 | 64, 427 | 0.81 | 52,374 |
| 1961. | 25,318 | 11.2 | 283, 394 | 1.12 | 486,324 | 1961...... | 1. 5666 | 39.2 | 61,310 | 0.89 | 54.775 |
| 1963 | 27,566 | 26.1 | 565,554 | 1.68 | 941,436 $1,259,223$ | 1962 | 1.522 | 47.4 48.2 | 72,186 67,987 | 0.88 0.85 | 63,343 58,050 |
| 1964. | 29.688 | 20.2 | 600,424 | 1.59 | 957,209 | 1964 | 1.431 | 46.4 | 66.395 | 0.86 | 57,379 |
| 1965. | 28,282 | 22.9 | 648,917 | 2 |  | 1965 | 1,508 | 49.3 | 74,170 | 2 |  |
| Oats- |  |  |  |  |  | Flaxseed- |  |  |  |  |  |
| Av. 1955-59 | 9,716 | 38.6 | 374,764 | 0.64 | 238.658 | Av. 1955-59. | 2.593 | 8.7 | 22.544 | 2.68 | 60.441 |
| 1961. | 8.543 | 33.2 | 283.965 | 0.75 | 212,795 | 1961. | 2,075 | 6.9 | 14,318 | 3.33 | 47.812 |
| 1982. | 10.591 | 46.6 | 493.610 | 0.67 | 329.528 | 1962 | 1,445 | 11.1 | 16,042 | 3.06 | 48.084 |
| 1963 | 9.488 | 47.8 | 453.103 | 0.62 | 280,797 | 1963 | I, 888 | 12.6 | 21,116 | 2.91 | 61,475 |
| 1964. | 8.191 | 43.6 | 357.178 | 0.69 | 247, 195 | 1964 | 1.978 | 10.3 | 20.313 | 2.94 | 59,768 |
| 1985. | 8.656 | 47.9 | 414,957 |  | ${ }_{2}$ | 1965 | 2,320 | 12.6 | 29,254 |  |  |
| Bat |  |  |  |  |  |  |  | cwt. | \% 000 | $\begin{aligned} & \$ \text { per } \\ & \text { cwet. } \end{aligned}$ |  |
| Av. 1955-59 | 8.971 | 26.5 | 237.926 | 0.79 | 187.661 | Av. 1955-59 | 305 | 132.2 | 40,297 | 1.92 | 77,504 |
| 1961. | 5,529 | 20.4 | 112,640 | 1.05 | 118.810 | 1961......... | 306 | 144.3 | $44+108$ | 1.40 | 61,833 |
| 1962. | 5.287 | 31.4 | 165, 888 | 0.94 | 156.036 | 1962 | 288 | 182.0 | 46.671 | 1.57 | 73.118 |
| 1953. | 6.160 | 35.8 | 220.664 | 0.94 | 207.937 | 1963 | 285 | 160.5 | 45, 809 | 1,72 | 78,609 |
| 1054. | 5,455 | 30.6 | 166.816 | 1.00 | 186,249 | 1964 | 281 | 189.7 | 47,733 | 2.90 | 138,490 |
| 1965. | 6,038 | 35.5 | 214,555 | 2 | ${ }_{2}$ | 1965 | 299 | 155.5 | 46.472 | ${ }_{2}$ | ${ }_{2}$ |
| Eye- |  |  |  |  |  |  |  | ton | ${ }^{\text {'000 }}$ tons | $\begin{gathered} \text { \$per } \\ \text { ton } \end{gathered}$ |  |
| Av. 1955-5 | 577 | 16.2 | 9.362 | 0.92 | 8,568 | Av. 1955-59 | 11,291 | 1.72 | 19,412 | 15.30 | 296.922 |
| 1961. | 561 | 11.6 | 6,519 | 1.07 | 6.983 | 1961......... | 12,229 | 1.70 | 20,812 | 15.63 | 325.327 |
| 1962. | 624 | 19.3 | 12.044 | 1.06 | 12,819 | 1962 | 12.370 | 1.82 | 22. 636 | 15.95 | 359.354 |
| 1963. | 652 | 19.7 | 12.848 | 1.19 | 15,295 | 1963 | 12,352 | 1.86 | 23,014 | 18.39 | 377,101 |
| 1984......... | 680 746 | 18.0 | 12,220 | 1.04 | 12,690 | 1984 | 12,507 | 1.71 | 21,365 | 18.52 | 395,593 |
| 180........ | 746 | 22.4 | 16,685 |  |  | 1985 | 12,690 | 1.66 | 21.099 | 2 |  |

[^155]9.-Acreages, Production and Values of Principal Field Crops, by Province, 1264 and 1865,
(Exelusive of Newtoundland)

| Field Crop and Province | Area |  |  | Total Production |  |  | Grose Farms Value ${ }^{1}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Average 1955-59 | 1964 | 19.5 | A verage 1955-59 | 1964 | 1985 | $\begin{gathered} \text { Average } \\ 1955-59 \end{gathered}$ | 1964 |
|  | $\begin{aligned} & \text { '000 } \\ & \text { acres } \end{aligned}$ | $\begin{gathered} \text { '000 } \\ \text { aeres } \end{gathered}$ | $\begin{aligned} & \text { '000 } \\ & \text { acres } \end{aligned}$ | $\begin{aligned} & \text { '000 } \\ & \text { bu. } \end{aligned}$ | $\begin{aligned} & \text { opo } \\ & \text { bu. } \end{aligned}$ | $\begin{aligned} & \text { '000 } \\ & \text { bu. } \end{aligned}$ | \$'000 | '000 |
| Fheat <br> Prince Edward Island <br> Nove Scotia <br> New Brunswick. <br> Quebec. | 22,730 | 29,086 | 28,282 | 465, 818 | 60\%,424 | 448,917 | ct8,018 | 957,309 |
|  |  |  |  | ${ }^{91}$ | 132 | ${ }^{97}$ | 164 | 229 |
|  |  |  |  | 31 62 | $\stackrel{29}{95}$ | 32 167 | 50 104 | 50 163 |
|  | 15 | 11 | 12 | 350 | 283 | 298 | 565 | 481 |
| Ontario: | 560 | 455 | 362 | 19,182 | 18,246 | 13,358 | 26,511 | 30,663 |
| Spring. | 18 | 17 | 14 | , 397 | 4,439 | 1365 | 26.517 | 738 |
|  | 2,325 | 3,385 | 3.240 | 54,000 | 85,000 | 79.000 | 73, 128 | 188,550 |
| Saskatebe | 14,494 | 19,200 | 18.500 | 274,000 | 348,000 | 400,000 | 358, 486 | 556, 800 |
|  | 5,253 | 6.495 | 6,050 | 116,200 | 145,000 | 153,000 | 146.824 | 224,750 |
| British Columbia....... | 58 | 115 | 93 | 1,298 | 3,200 | 2.660 | 1,660 | 4,800 |
| Bats.. | 9,716 | 8,191 | 8,656 | 374,764 | 357,178 | 414,957 | 238,458 | 247,195 |
| Prince Edward Ysland. | 92 | 92 | 89 | 4,014 | 5,272 | 3,519 | 2,983 | 4,218 |
| Nova Scotia. New Brunswick | 42 | 34 | 31 | 1,891 | 1,642 | 1,293 | 1,756 | 1.412 |
|  | 122 | 82 | 86 | 5.081 | 3,895 | 3,461 | 3.925 | 3, 194 |
| New Brunswick.......... Quebec. Ontario | 1,271 | 1,184 | 1,165 | 44,582 | 47,597 | 41.940 | 38,017 | 41,409 |
|  | 1, 544 | 1,663 | 1.580 | 78,756 | 88,472 | 89.744 | 57,774 | 65, 469 |
| Ontario.................. | 1,557 | 1,635 | 1.525 | 57.200 | 73,000 | 74.000 | 32,544 | 47,450 |
| Saskatcheman. | 2.587 | 1,469 | 1.920 | 88.600 | 54,000 | 94,000 | 47,724 | 34,020 |
| Alberta. | 2,362 | 1,950 | 2.200 | 92,400 | 79.000 | 104,000 | 51,352 | 47, 400 |
| British Columbia...... | 89 | 82 | 80 | 4,240 | 4,300 | 3,000 | 2,583 | 2,623 |
| Barley.................. | 8.971 | 5,455 | 6,038 | 237,926 | 168,816 | 214,555 | 187,661 | 168,249 |
| Prince Edward Island. <br> Nova Scotia. |  | 11 | 12 |  | 582 | 433 | ${ }_{5}^{14}$ | ${ }_{86}^{617}$ |
|  | 2 | 2 | 3 | 53 | 75 | 91 | 59 | 86 |
| Nova Scotian New Brunsw ......... | 5 | ${ }^{3}$ | 3 | 144 | 134 | 117 | 153 | 161 |
| Quebec................... | 30 | 14 | 15 | 916 | ${ }^{506}$ | 586 | 1,026 | 582 |
|  | 102 | 113 | 140 | 3,874 | 5.119 | 6.888 | 3.921 | 5, 6831 |
|  | 1,639 | 497 | 601 | 38,400 | 18,000 | 22,000 | 32,198 | 16.800 |
| Manitaba Sagkatchewan Alberta | 8,485 | 1,400 | 1,750 | 87,400 | 34,000 | 65,000 | 68,312 | 34,880 |
|  | 3,642 | 3,320 | 3,390 | 105,200 | 107,000 | 115,000 | 80.526 | 104,880 |
| British Columbia...... | 65 | 95 | 124 | 1.896 | 3,400 | 4,500 | 1,422 | 2,822 |
| Fall Eye. | 434 | 579 | 648 | 7,384 | 11,120 | 14,885 | \$,862 | 11,558 |
| Quebec.................... | ${ }_{6}^{7}$ | 2 | 3 | ${ }^{147}$ | ${ }^{55}$ |  | 173 |  |
|  | 76 | $\begin{array}{r}56 \\ 146 \\ \hline\end{array}$ | 50 148 | 1,708 | 1,422 | 1,275 3,349 | 1, 18148 | 1,202 |
| Manitoba............... | 191 | 218 | 148 263 | 2,670 | 3,400 | 8,000 | 2, 178 | 3.502 |
| Alberta............ | 85 | 157 | 177 | 1,540 | 3,150 | 4,150 | 1.292 | 3,213 |
| British Columbia | 2 | 2 | 2 | 45 | 43 | 51 | 35 | 43 |
| Spring Hye. | 147 | 101 | 103 | 1,932 | 1,100 | 1,810 | 1,765 | 1,131 |
| Saskatchewan. | ${ }^{8}$ | ${ }_{3}$ | 37 | + 1120 | 50 700 | 60 1,300 | 1.365 | 721 |
|  | 114 | 73 25 | 77 23 | 1.520 | 700 850 | 1,300 450 | $\begin{array}{r}1+365 \\ \hline 299\end{array}$ | ${ }_{357}$ |
| Alberta.. | 25 | 25 | 23 | 350 | 350 | 450 | 299 | 35 |
| AHEYe. | 57 | 68 | 748 | \$,362 | 12,220 | 16,695 | 8,548 | 12,689 |
| Quebeo................. | $7{ }^{7}$ | 2 | ${ }^{3}$ | 1147 |  | 1,275 | 1.783 | 1,550 |
|  | 78 | 56 | 50 | 1,708 | 1,422 3.100 | 1,275 | 1,250 | 3,255 |
| Saskatche | 377 | 149 289 | 151 | 1+382 | 4,100 | 7,300 | 1,250 | 4,223 |
| Alberta. ${ }_{\text {British }}$ Columbia | 110 | 182 | 200 | 1,890 | 3.500 | 4,600 | 1,591 | 8,570 |
|  | 2 | , | 2 | 45 | 43 | 31 | 35 | 43 |
| Peas. | 77 | 71 | 55 | 1,264 | 1,598 | 1,244 | 2,721 | 2,957 |
| Quebec................. | 3 | 2 | 3 | 55 | 53 | ${ }^{68}$ | 217 | ${ }_{140}^{238}$ |
|  | 6 | 3 | $\stackrel{2}{2}$ | 105 | $\begin{array}{r}54 \\ \hline 1.196\end{array}$ | 800 | 1,281 | 2,272 |
| Manitoba............... | 51 | 52 | $\stackrel{36}{3}$ | 747 46 | 1,196 | 800 | ${ }^{1} 107$ | 92 |
| Saskatchewnn. Alberta | 3 | 4 8 8 | 3 | 179 | 198 | 215 | 499 | ${ }^{499}$ |
|  | 6 | 8 | 8 | 133 | 53 | 53 | 357 | 116 |

1 Values for 1965 not available at time of going to preas; see footnote ${ }^{2}$, Table 8.
9.-Acreages, Production and Values of Principal Field Crops, by Province, 1964 and 1965, with Average for 1955-55-continued


[^156]9.-Acreages, Production and Values of Principal Field Crops, by Province, 1964 and 1965, with Average for 1955-55-concluded

| Field Crop sud Province | Area |  |  | Total Production |  |  | Gross Farm Value ${ }^{1}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \hline \text { Aversge } \\ 1855-59 \end{gathered}$ | 1964 | 1965 | $\begin{gathered} \text { Average } \\ 1955-59 \end{gathered}$ | 1964 | 1965 | $\begin{aligned} & \text { Average } \\ & 1955-59 \end{aligned}$ | 1964 |
|  | '000 acres 36 | '000 acres 25 | '000 gerea 23 | '000 tons | '000 tons | '000 tons | \$'000 | \$ 600 |
| Prince Edward İsland. | 36 6 | 23 | 23 3 | 391 80 | 338 48 | 294 | 8 8,419 | 7,383 |
| Nova Srotia ......... | 6 3 3 | 3 2 | $\begin{aligned} & 3 \\ & 2 \end{aligned}$ | ${ }_{51} 81$ | 48 25 | 26 23 2 | 1,358 | 1,008 |
| New Brunswick. . . | 3 | 2 | $\begin{aligned} & 2 \\ & 2 \end{aligned}$ | 32 | 20 | 16 | 1,284 | +475 |
| Quebec.......... | 9 | 6 | 5 | 68 | 44 | 41 | 1.805 | 883 |
| Ontario........ | 15 | 12 | 12 | 160 | 202 | 188 | 3,168 | 4,686 |
| Tame Hay.......... | 11,291 | 12,507 | 12,690 | 19,412 | 21,365 | 21,099 | 236,522 | 385,588 |
| Prince Edward lsland. | 201 | 180 | 181 | 356 | 364 | 246 | 4,597 | 4,459 |
| Nova Scotia. ........ | 296 | 227 | 229 | 613 | 477 | 428 | 10,549 | 7,513 |
| New Brunswick. | 374 | 290 | 275 | 690 | 540 | 412 | 9,849 | 7,830 |
| Quehec. | 3.464 | 3,432 | 3.415 | 5,962 | 6,178 | 4, 132 | 92,154 | 108.570 |
| Ontario. | 3.278 | 3.150 | 3,100 | B. 233 | 6,426 | 5.458 | 00,040 | 133,681 |
| Manitobe. | 713 | 1,078 | 1,090 | 1,239 | 1.500 | 1,850 | 14,74t | 25.000 |
| Saskatchewan. | 785 | 1,110 | 1,112 | 1,016 | 1,180 | 2,075 | 14, 812 | 20,060 |
| Alberts | 1,829 | 2,628 | 2,830 | 2,521 | 3 3,600 | 5.500 | 41,202 | 68.400 |
| British Colurabia. | 351 | 422 | 458 | 777 | 1,000 | 1,000 | 18,978 | 21.500 |
| Fodder Cern. | 375 | 425 | 470 | 3,637 | 4,974 | \%,161 | 17,587 | 29,352 |
| Quebec. | 68 | 55 | 60 | 826 | 636 | 629 | 3,997 | 4, 166 |
| Ontario. | 282 | 315 | 350 | 2+854 | 4,032 | 4,130 | 12,409 | 23, 184 |
| Manitoha. | 21 | 49 | 53 | 108 | 245 | 316 | 708 | 1,470 |
| Saskatchewan ..... | 2 | 2 | 2 | 5 | ${ }^{6}$ | 9 | 65 | 72 |
| Britigh Columbia... | 3 | 4 | 5 | 44 | 35 | 77 | 349 | 440 |
| Susar Beets. | 87 | 101 | 85 | 1,098 | 1,298 | 1,142 | 15,521 | 18,081 |
| Queber. | 6 | 11 | 9 | 68 | 151 | 160 | 953 | 2.440 |
| Ontario. | 24 | 19 | 11 | 329 | 338 | 216 | 3,908 | 4,243 |
| Manitoba. | 21 | 30 | 26 | 208 | 285 | 262 | 2.918 | 4,034 |
| Alberta... | 37 | 42 | 39 | 493 | 527 | 504 | 7.652 | 8,374 |

${ }^{1}$ Values for 1965 not a vailable at time of going to press; see footnote ${ }^{2}$, Table 8.
10.-Acreages and Production of Grain in the Prairie Provinces, 1961-65

| Grain | 1961 | 1962 | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Acrenges |  |  |  |  |
|  | $\begin{aligned} & 000 \\ & \text { acres } \end{aligned}$ | ${ }^{\circ} 000$ acres | '000 | - 0000 | $\begin{aligned} & 000 \\ & \text { acres } \end{aligned}$ |
| Whest. | 24.629 | 26,237 | 26.996 | 29.080 | 27,790 |
| Oats. | 5,122 | 7,152 | 6,260 | 5,054 | 5,845 |
| Barley | 5,361 | 5,097 | 5,922 | 5,217 | 5,741 |
| Rye.... | 2, 4931 | 556 1.396 | 588 1,629 | 620 1,916 | 2,265 |
| Rapeseed. | 2,710 | ${ }_{3}$ | ${ }_{4} 178$ | 1,701 | 1,435 |
|  | Production |  |  |  |  |
|  | '000 bu. | '000 bu. | '000 ba. | ${ }^{\prime} 000$ bu. |  |
| Wheat. | 260.000 | 546,000 | 703, 000 | 578,000 206000 | 632,000 272,000 |
| Oats... | 129,000 106.000 | 322,000 158.000 | 301,000 213.000 | 206,000 157,000 | 202.000 |
| Barley. | 108,000 4,836 | 158,000 10.400 | 213.000 11,180 | 157,000 10,700 | 15.300 |
| Flaxseed | 13,900 | 15. 300 | 20.300 | 19.460 | 28.400 |
| Rapeseed | 11. 220 | 5,860 | 8,360 | 13,230 | 22,800 |

Stocks of Canadian Grain.-Table 11 shows the stocks of Canadian grain on hand in Canada and in the United States on July 31 for the years 1961-65, with averages for the five-year periods 1950-54 and 1955-59. Stocks in Canada are separated into those in commercial positions and those on farms. Stocks on farms and in country elevators in the Prairie Provinces are given separately.

## 11.-Caryover of Canadian Grain as at July 31, 1961-45, with Averages for 1850-54 and 1955-5s

| Grain and Year | Total in Canada and United States | $\begin{gathered} \text { Total } \\ \text { in } \\ \text { Canads } \end{gathered}$ | $\begin{gathered} \text { In } \\ \text { Cornmercial } \\ \text { Storage } \\ \text { in } \\ \text { Canads } \end{gathered}$ | $\begin{gathered} \text { On Farms } \\ \text { in } \\ \text { Canada } \end{gathered}$ | Prairie Provinces |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | On Farms | $\begin{gathered} \text { In } \\ \text { Couniry } \\ \text { Elevators } \end{gathered}$ |
|  | bu. | bu. | bu. | bu. | bu. | bu. |
| Wheat- |  |  |  |  |  |  |
| Av. 1950-54.. | 304,088, 145 | 303.087,359 | 227,189.959 | 75, 897.400 | 73.600,000 | 113,508,787 |
| Av. 1955-59 | 617,264,667 | 816.947.244 | 401, 923.244 | 215.024,000 | 211,600,000 | 235,770,759 |
| 1961... | 607, 840,667 | 607,840,667 | 437.390, 687 | 170, 450, 000 | 168,000,000 | 244,893.302 |
| 1982 | 391,053,273 | 391,058.273 | 331.858,273 | 59.170,000 | 56,000,000 | 160.966.460 |
| 1983 | 487, 247,241 | 487,247.241 | 422,547,241 | 64, 200,000 | 63.000 .000 | 231,420,869 |
| 1964 | 459,440, 123 | 459,440,128 | 338,800. 128 | 120,640,000 | 118,000.000 | 193,860.624 |
| 1965. | 513,024,073 | 513,024,073 | 403, 924,073 | 109, 100,000 | 107,000,000 | 238,611,266 |
| Oats- |  |  |  |  |  |  |
| Av. 1950-54. | 103,723,676 | 102,717,439 | 34,956,239 | 67,761.200 | 55,500,000 | 20.442.787 |
| Av. 1958-59 | 140.236,549 | 140.051.508 | 43,511,508 | 96,540,000 | 78,800,000 | 28,289, 269 |
| 1961. | 115,153, 740 | 115, 153,710 | 21,453,740 | $93,700,000$ | 75,000,000 | 11.192,401 |
| 1962 | 79,068, 164 | 79, 066, 164 | 22, 168, 164 | 56,900,000 | 36.000,000 | 14,099,060 |
| 1963. | 150.278,486 | 150, 278,486 | 57, 878,486 | 92,400,000 | 68,000,000 | 40, 401,480 |
| 1964. | 179, 407,849 | 179,407, 849 | $50+60$, 849 | 128,800,000 | 103.000,000 | 38,930.666 |
| 1965. | 130, 120,562 | 130,120.562 | 39.420.562 | 90,700,000 | 68,000,000 | 23,648,678 |
| Bariey- |  |  |  |  |  |  |
| Av. 1950-54. | 82, 188,470 | 82,028,552 | 44,888, 752 | 37, 139,800 | 36,200,000 | 24,153.330 |
| A v. 1955-59 | 118.906.634 | 118,783,588 | $60.532,588$ | 38,251,000 | 56,000,000 | 37,528,726 |
| 1961. | 112,557,260 | 112,282, 833 | 52, 162, 633 | $60,100,000$ | 58,000,000 | 29,376,809 |
| 1962. | 57,824,054 | 57,824,054 | 31. 544,054 | 26,280,000 | 24,000,000 | 17,615,208 |
| 1883 | $89.245,306$ | 89,245,306 | 60,295.306 | 28,950,000 | 27,000.000 | 41,360,678 |
| 1964. | 118,270, 178 | 118,270, 178 | 58,270, 178 | 80, 000.000 | 58,000,000 | 37,713,677 |
| 1965. | 88, 776,413 | 88,776,413 | 52,976,413 | 35,800,000 | $34.000,000$ | 35, 148,419 |
| Bye- |  |  |  |  |  |  |
| Av. 1950-54 | 11, 656,052 | 11,000,586 | 6, 136,196 | 4,864,400 | 4,786,000 | 2.031.544 |
| Av. 1955-59 | 13,467,828 | 13,237.663 | 5,078,663 | 8, 159,000 | 7,820,000 | 2,327,160 |
|  | 7,417,007 | 7,417,007 | 4, 817,007 | 2, 500.000 | 2,400,000 | 1,931,297 |
| 1962. | 3,788,786 | 3,717,786 | 2,527,786 | 1,190,000 | 1,150,000 | 733,490 |
| 1963. | 4,159,399 | 4, 159,399 | 3.609.399 | 550,000 | 1530.000 | 1,605,693 |
| 1964. | 7.051,748 | $6.624,181$ | 4,974,181 | 1, 650.000 | 1,600,000 | 2,415,499 |
| 1985. | 8,301,805 | 7.927,959 | 6,227,959 | 1,700.000 | 1,700,000 | 2,556,448 |
| Fluxseed- |  |  |  |  |  |  |
| Av. 1950-54. . | 3,273,720 | 3,273.720 | 2,285, 920 | 987,800 | 965,000 | 417,047 |
| Av. 1955-59. | $5.068,048$ | 5,068,048 | 3, 752,448 | 1,315,800 | 1,296.000 | $913+868$ |
| 1961. | 7,579,801 | 7,579,801 | 6, 169.801 | 1.410 .000 | 1. 400,000 | 1,254,024 |
| 1962 | 5,268.927 | 5,268, 927 | 3,948.927 | 1,320,000 | 1.300.000 | 1,268,994 |
| 1963. | 3,988,169 | 3,988, 169 | 3.178,169 | ${ }^{1} 810.000$ | 800,000 | 1,444,034 |
| 1965. | 6,550,719 | 6,550,719 | 5.250 .719 | 1,300,000 | 1,360,000 | 1,873,753 |
| 903. | 7,141,165 | 7.141,165 | 6,141, 165 | 1,000,000 | 1.000,000 | 2,256,187 |

## Subsection 4.-Livestock and Poultry

Livestock.-Several new records were set in 1965 by the livestock industry. Public markets established the highest volume ever recorded in weekly deliveries. Higher prices were received for most classes of livestock and domestic and export demand remained consistently broad. The 551,983 head of cattle exported was the second highest number
on record, exceeded only in 1958; exports of live calves also increased substantially, amounting to 60,940 head. There was an important change in the export-import trade compared with 1964 in that no slaughter cattle or calves were imported from the United States in 1965. Despite higher prices during most of the year, the over-all averages for all cattle and calves were about the same as in 1964; this was due to the exceptionally heavy volume of cows marketed, another noteworthy feature of 1965. At June 1, 1965 the number of cattle and calves in Canada (excluding Newfoundland and the Territories) was estimated at a record $13,001,000$, a 1.4-p.c. increase over June 1 of the previous year. Beef cows continued to increase in number and at $2,870,800$ were up 5.2 p.c. but milk cow numbers declined by about 1 p.c. to $2,885,000$, the lowest since 1916.

Higher prices were obtained for hogs during the year, moving to all-time highs in November and December; the year's high of $\$ 43.60$ for Grade A hogs was reached at Toronto on Dec. 28. Total marketings were 2.8 p.c. below those of the previous year, but were the fifth largest on record; Grade A hogs made up 41.1 p.c. of the total marketings, also a new high. At June 1, 1965 the hog inventory stood at $5,136,000$, down 9 p.c. from the same date of 1964.

The number of sheep on farms at June 1 was $1,167,000$, the lowest since the start of recordings in 1920. There was a sharp increase in the direct export of live animals at 20,780 compared with 9,747 in 1964 but live imports at 17,660 were down almost a third.

Per capita disappearance of all red meats in 1965 was estimated at $146.3 \mathrm{lb} ., 2.8 \mathrm{lb}$. lower than in 1964. The figures for individual meats were: beef 78.7 lb . ( 78.5 in 1964); veal 8.0 lb . (6.9); mutton and lamb 2.8 lb . (3.4); pork 49.2 lb . (52.0); offal 3.4 lb . (3.8); and canned meats 4.2 lb . (4.5). All figures are on a cold dressed carcass basis.


## 12.-Ltrestock on Farms and Average Value per Head, by Protince, 1956, 1964 and 1965

(Exclusive of Newfoundland and the Yukon and Northwest Territories)

| Province and Item | Livestock on Farms |  |  | Average Value per Head |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1956 | 1964 | 1985 | 1956 | 1964 | 1985 |
|  | '000 | '000 | '000 | \$ | \$ | \$ |
| Prince Edward tsland- |  |  |  |  |  |  |
| Hilk coms ${ }^{\text {Hemen }}$ | 43.8 | 37.0 | 39.0 | 131 | 182 | 182 |
| Otber cattle | 79.9 | 87.0 | 91.0 | 62 | 90 | 87 |
| Sbeep....... | 33.4 | 18.0 | 14.0 | 15 | 14 | 15 |
| Swine.. | 46.7 | 61.0 | 70.0 | 25 | 26 | 28 |
| Nora Scotis- |  |  |  |  |  |  |
| Horses.... | 17.9 | 6.6 | 6.1 | 119 | 180 | 187 |
| Milk comgl | 82.8 | 59.0 | 57.0 | 124 | 171 | 171 |
| Other cattle. | 104.6 | 100.0 | 100.0 | 61 | 93 | 90 |
| Sbeep.. | 83.2 | 47.0 | 44.0 | 15 | 14 | 13 |
| Swine. . | 32.7 | 56.0 | 62.0 | 26 | 28 | 27 |
| New Rrunswlek- |  |  |  |  |  |  |
| Milk cowil | 85.6 | 58.0 | 56.0 | 130 | 161 | 163 |
| Other cattle | 88.0 | 95.0 | 94.0 | 58 | 88 | 86 |
| Sheep.. | 64.0 | 34.5 | 32.0 | 15 | 14 | 14 |
| Swine. | 53.8 | 43.0 | 38.0 | 26 | 27 | 27 |
| Quebee- |  |  |  |  |  |  |
| Horsea. | 163.5 | 78.0 | 71.0 | 148 | 206 | 210 |
| Milk cowr ${ }^{\text {a }}$ | 1,054.3 | 1, 0660.0 | 1,086.0 | 130 | 174 | 176 |
| Other cattle | 947.9 | 922.0 | 904.0 | 55 | 78 | 78 |
| Sbeep. | 338.6 | 144.0 | 133.0 | 14 | 14 | 15 |
| Swine. | 887.1 | 1,036.0 | 932.0 | 25 | 27 | 30 |
| Ontario- |  |  |  |  |  |  |
| Horses.. | 139.6 | 83.0 | 79.0 | 109 | 174 | 174 |
| Milk cowst. | 1,025.9 | 954.0 | 943.0 | 155 | 220 | 221 |
| Other cattle | 1,875.8 | 2,349.0 | $2,401.0$ | 93 | 127 | I24 |
| Sheep. | 393.8 | 310.0 | 302.0 | 19 | 19 | 19 |
| Swine | 1,548.3 | 2.060 .0 | 1,940.0 | 26 | 29 | 31 |
| Manitoba- |  |  |  |  |  |  |
| Horees. . | 75.1 | 39.0 | 37.0 | 82 | 127 | 116 |
| Milk cows ${ }^{\text {a }}$ | 223.0 | 182.0 | 176.0 | 141 | 203 | 189 |
| Otber cattle | 648.5 | 957.0 | 974.0 | 86 | 129 | 119 |
| Sheepp. | 73.1 | 66.0 | 57.0 | 15 | 14 | 15 |
| Swine. | 310.5 | 450.0 | 408.0 | 22 | 25 | 27 |
| Sagkatchewan- |  |  |  |  |  |  |
| Horses...... | 170.7 | 84.0 | 79.0 | 65 | 104 | 106 |
| Milk eowsi | 272.2 | 193.0 | 178.0 | 140 | 207 | 193 |
| Other cattle | 1,596.8 | 2.107 .0 | 2. 162.0 | 90 | 136 | 126 |
| Sbeep. | 142.7 | 165.0 | 150.0 | 14 | 15 | 15 |
| Swibe. | 591.9 | 505.0 | 405.0 | 21 | 26 | 26 |
| Alberts- |  |  |  |  |  |  |
| Horses. | 154.6 | 96.0 | 92.0 | 64 | 112 | 112 |
| Milk cowst | 282.2 | 274.0 | 262.0 | 148 | 210 | 182 |
| Other cat | 2,167.0 | 2,861.0 | 2,933.0 | 90 | 135 | 125 |
| Sheep. | 404.8 | 409.0 | 355.0 | 16 | 15 | 15 |
| Swine. | 1,211.5 | 1,370.0 | 1,245.0 | 23 | 20 | 27 |
| Eritish Columbia- |  |  |  |  |  |  |
| Horses..... | 26.8 | 25.0 | 23.0 | 77 | 135 | 139 |
| Milk cowsi | 90.2 | 89.0 | 88.0 | 139 | 203 | 199 |
| Other cattle | 332.7 | 433.0 | 457.0 | 86 | 126 | 118 |
| Swine...... | 88.1 48.4 | 93.0 39.0 | 80.0 36.0 | 17 27 | 17 29 | 18 29 |
| Totals- |  |  |  |  |  |  |
| Horses.. |  |  | 398.0 |  | 149 | 146 |
| Millk cows ${ }^{\text {d }}$ | 3,160. | 2,906. | 2,885.0 | 141 | 197 | 194 |
| Other cattle. | 7,851.2 | 9,911.0 | 10,116.0 | 85 | 128 | 119 |
| Sheep. | 1,619.7 | 1,386.5 | 1,167.6 | 18 | 18 | 16 |
| swine. | 4,731.9 | 5,620.0 | 5,136. | 4 | 27 | 29 |

[^157]The Canada Department of Agriculture inspects all livestock in plants designated as inspected establishments under the Meat and Canned Foods Act. A record is kept of these inspections and figures from 1956 are given in Table 13. Local wholesale butcherings and slaughterings carried out by retail butchers and by farmers for their own use are not included. Actually, the slaughtering and meat packing industry is concentrated in a comparatively small number of large establishments to facilitate greater efficiency and utilization of products; thus the figures of Table 13 are fairly inclusive.

Almost 13 p.c. more cattle were slaughtered in inspected establishments in 1965 than in 1964, and slaughterings of calves were up 19 p.c. On the other hand, slaughterings of sheep and lambs declined by 17.7 p.c. and slaughterings of hogs by 3.1 p.c.

## 13.-Livestock Slaughtered at Inspected Establishments, 1956-65

(Exclusive of Newfoundland)

| Year | Cattle | Calves | Sheep | Hogs |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. |
| 1950 | 1,874.363 | 891,615 | 599,974 | 5,548,289 |
| 1957. | 1,986,251 | 887, 102 | 581,903 | 4,971,477 |
| 1958 | 1.889.280 | 784, 867 | 548,976 | 5,963, 928 |
| 1959 | 1,74,185 | 678.571 | 569,743 | 8.020 .760 |
| 1960. | 1,941,703 | 712,100 | 562.678 | 6,182,315 |
| 1961. | 2,041,473 | 690, 286 | 633,347 | 5,849,875 |
| 1962 | 2,028,159 | 710, 229 | 567,463 | 6+031,933 |
| 1963. | 2,126,716 | 671,390 | 532,015 | 5,909,508 |
| 1964. | 2,422,260 | 750, 319 | 497, 689 | 6,627,600 |
| 1965. | 2,734,514 | 894,728 | 409,783 | 6,421,226 |

Poultry.-Poultry on farms and their values in 1964 and 1965 compared with 1956 are given in Table 14; production and consumption of poultry meat are included in Table 15.

> 14.-Numbers and Values of Poultry on Farms, by Province, as at Jume 1 , 1556,1964 and 1965

| Province and Year | Hens and Chickens |  | Torkeys |  | Geese |  | Duteks |  | All Poultry |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | Value | No. | Value | No. | Value | No. | Value | No. | Value |
|  | '000 | \$ 000 | '000 | $8{ }^{\prime} 000$ | ${ }^{\prime} 000$ | \$'000 | '000 | $8^{\prime} 000$ | '000 | \$000 |
| Newfoundland. |  |  |  |  |  |  |  |  | . |  |
| Prince Edward Is... 1953 | 813 | 795 | 14 | 33 | 9 | 22 | 5 | 7 | 840 | 857 |
| Price Edward Lo... 1964 | 445 | 475 | 9 | 49 | 4 | 15 | 2 | ${ }_{3}^{3}$ | 480 453 | 542 520 |
| 1965 | 435 | 448 | 10 | 51 | 6 | 22 | 2 | 5 |  | 520 |
| Nova Scotia. . . . . . 1956 | 1,909 | 2.600 | 54 | 165 | 3 | 8 | 2 | 3 | 1,868 | 2,776 |
| Nova Scota . . . . 1964 | 2,110 | 2,323 | 47 | 231 | 1 | 3 | 1 | ${ }_{2}^{2}$ | 2,158 | 2, ${ }^{2}, 769$ |
| 1965 | 2,210 | 2,403 | 70 | 360 | 1 | 4 | 1 | 2 | 2,262 |  |
| New Brunswick.... . 1956 | 1,125 | 1,384 | 45 | 150 | 4 |  | 2 | 3 |  |  |
| New Brunswick..... ${ }_{1964}$ | 1,070 | 1, 1,344 | 15 | 77 | 1 | 4 | 1 | 1 | 1,087 | +1.426 |
| 1965 | 1. 150 | 1,346 | 31 | 161 | 1 | 3 | 1 | 2 | 1,182 | 1,512 |
| Quebec............. 1956 | 10.882 | 12,157 | 632 | 2,023 | 12 | 37 | 45 | 69 | 11,571 | 14,286 |
| Quebec............. 1964 | 13, 640 | 13,564 | 710 | 3,330 | 10 | 36 | 87 | 126 | 14, 427 | 17,056 |
| 1965 | 14,880 | 13,401 | 900 | 4,068 | 8 | 28 | 60 | 116 | 15,828 | 17,613 |
| Ontario. . . . . . . . . . 1956 | 24,934 | 26,040 | 1,415 | 4,273 | 96 | 231 | 124 | 153 | 26,569 | ${ }^{30,6097}$ |
| Ontaro........... 1964 | 24, 450 | 22,928 | 2,910 | 14,696 | 78 | 312 | 133 | 261 | 27,571 | 38,197 40.084 |
| 1965 | 23, 665 | 23,294 | 3,400 | 16,286 | 55 | 217 | 140 | 287 | 27,260 | 4, 04 |

14.-Numbers and Values of Poultry on Farms, by Province, as at June 1 , 195\%, 1964 and $1965-$ concluded

| Province and Year | Hens and Cbickens |  | Turkeys |  | Geese |  | Ducks |  | All Poultry |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | Value | No. | Value | No. | Value | No. | Value | No. | Value |
|  | '000 | \$'000 | '000 | \$000 | ${ }^{\prime} 000$ | \$'000 | '000 | \$'000 | '000 | \% 600 |
| Menitobs.......... ${ }_{\text {1964 }}^{1956}$ | 5,990 6,270 | 4,573 4,925 | 684 885 | 1,458 3,292 | 48 75 | 91 214 | 40 18 | 41 29 | 6,742 7,248 | ¢, 163 8,460 |
| 1965 | 5,820 | 9,458 | 1,000 | 3,760 | 100 | 291 | 40 | 67 | 6,980 | 8,577 |
| Saskatchewan...... 1956 | 8.219 | 6,021 | 773 | 1,697 | 52 | 113 | 78 | 88 | 9,122 | 7,917 |
| 1964 | 6,050 | 4,132 | 705 | 2,679 | 35 | 112 | 50 | 94 | 6, 840 | 7,017 |
| 1965 | 5,300 | 3,412 | 770 | 2.888 | 30 | 97 | 50 | 95 | 6,150 | 6,492 |
| Alberta............ 1956 | 9,444 | 7.146 | 820 | 1,956 | 86 | 184 | 99 | 110 | 10,449 | 9,396 |
| 1964 | 8,600 | 6,203 | 750 | 3,090 | 80 | 246 | 85 | 146 | 9,515 | 9,685 |
| 1965 | 7,800 | 5,563 | 900 | 3,881 | 75 | 236 | 80 | 148 | 8,855 | 9,628 |
| British Columbis. . 1956 | 4,221 | 4,978 | 354 | 1,022 | 14 | 41 | 24 | 37 | 4,613 | 6,088 |
| 1964 | 5,990 | 6,821 | 500 | 2,405 | 9 | 34 | 25 | 47 | 8,524 | 9,307 |
| 1965 | 6,200 | 6,459 | 525 | 2,678 | 8 | 31 | 25 | 52 | 6,758 | 9,220 |
| Tetals......... 1956 | 67,535 | 65, 694 | 4,774 | 12,787 | 326 | 73 | 415 | 509 | 73,054 | 75,729 |
| 1984 | 68,625 | 67,715 | 6,531 | 23,849 | 293 | 976 | 381 | 769 | 75,830 | 94,749 |
| 1965 | 67,440 | 00,785 | 7,006 | 33,033 | 284 | 929 | 399 | 774 | 75,725 | 36,421 |

15.-Production and Domestic Dlsappearance of Poultry Meat, 1956, 1964 and 1965
(Eviscerated weight)

| Year and Item | Net <br> Production | Total Supply | Domestic Disappearance | Per Capita Consumption |
| :---: | :---: | :---: | :---: | :---: |
| 1356 | '000 lb. | '000 lb. | ${ }^{0} 000 \mathrm{lb}$. | lb. |
| Fowl and chickens. | 308,912 | 329,742 | 308,203 | 19.2 |
| Terkeya.... | 89,968 | 112,216 | 96, 411 | 6.0 |
| Grese... | 2,702 | 2,803 | 2,878 | 0.2 |
| Ducks. | 2,885 | 4,001 | 3,802 | 0.2 |
| Tetals, 1956. | 404,467 | 448,762 | 411,124 | 25.6 |
| 1864 |  |  |  |  |
| Fowl and chickens, | 483, 349 | 508,811 | 489,478 | 25.4 |
| Turkeya, | 162,448 | 188,563 | 166.584 | 8.6 |
| Geese... | 3,020 4,922 | 3,218 | 2,974 | 0.2 |
|  | 4,922 | 6.758 | 6,216 | 0.3 |
| Totals, 1964. | 653, 739 | 707,351 | 6\%5,252 | 34.5 |
| 1965 |  |  |  |  |
| Fowl and obickens. Turkeys. | 502,547 | 529,325 | 510.512 | 26.0 |
| Turkeyn | 186.299 | 211,640 | 186,645 | 9.5 |
| Ducks. | 4,974 | 7,108 | 3,038 6,830 | 0.2 |
| Totals, 1985. | ©94, 953 | 751,364 | 707,095 | 36. ${ }^{\text {c }}$ |

## Subsection 5.-Dairying

The dairy industry occupies a prominent position in Canadian agriculture and is an important source of farm cash receipts. Although the size of the national dairy herd has been declining gradually, milk production declined in 1965 for the first time in six years.

There has been an over-all increase in output per cow as a result of the tendency to switch from low-producing breeds and from the following of improved livestock programs, especially through artificial insemination. Dairy herds have become fewer but larger. In 1951 about 12 p.c. of the cows were in herds of 13 or more but by 1961 the percentage had risen to 27 . In Ontario and Quebec over 40 p.c. are now in this category. Increasing specialization and the change to larger herds often means better managed cows and more milk per cow.

Milk production is concentrated in Central Canada, Ontario and Quebec accounting for about 71 p.c. of the total quantity. Of the total output in $1965,61.9$ p.c. was used for factory-made dairy products, 28.6 p.c. was sold in fluid form and 9.5 p.c. was used for all purposes on farms. In recent years, fluid milk usage has risen slowly but has shown little change as a percentage of total milk production. Fluid sales, which include standard, homogenized, partly skimmed and skim milk, and a variety of creams, are being maintained by the increased demand for partly skimmed milk which has occurred as a result of a shift in emphasis from fat to non-fat constituents in milk.
16.-Production and Utilization of Milk, by Province, 1963-65


[^158]17.-Farm Values of Milk Production, by Province, 1563-65

| Province and Year | Value of Milk Used in Manufacture |  | Value of Milk Otherwise Used |  |  | Value of Total Milk Production |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\underset{\text { Farms }}{ }{ }^{\mathrm{Om}}$ | $\underset{\text { Factories }}{\text { In }}$ | Fluid Salea | Farm-Home Consumed | Fed on Farms ${ }^{2}$ |  |
|  | \$'000 | ${ }^{+} 000$ | \$000 | $8 \cdot 000$ | \$000 | \$'000 |
| Newfoundland........... |  | . |  |  |  |  |
| Prince Edward Island. . . . . . . 1963 | 82 | 3,932 | 898 | 555 | 755 | 8, 172 |
| 1964 | 29 | 4,356 | 917 | 577 | 872 | 6,751 |
| 1865 | 21 | 4,535 | 911 | 583 | 884 | 8,934 |
| Noya Seotis.................. ${ }^{1963}$ | 144 | 2, 441 | 9.284 | 779 | 817 | 13,465 |
| 1964 1965 | 111 | 2,612 | 9,710 8,934 | 777 | 721 623 | 13,931 14,070 |
| New Bronswick ........... 1963 | 173 | 4,040 | 6.996 | 778 | 848 | 12,835 |
| ew Bruswick............... 1984 | 130 | 4,125 | 7,293 | 764 | 944 | 13,256 |
| 1965 | 110 | 3,777 | 7.626 | 723 | 826 | 13,062 |
| Quebee....................... 1963 | 314 | 108,937 | 59.791 | 7,402 | 16.096 | 192,540 |
| 1904 | 260 | 113,212 | 62,832 | 7,628 | 14,939 | 188,369 |
| 1985 | 184 | 124,334 | 86,506 | 7,715 | 15,306 | 214,045 |
| Ontatio....................... ${ }_{1964}^{1963}$ | 299 | 104, 378 | 89,062 | 5,925 | 15,195 16,005 |  |
| 1964 1965 | 198 | 113,249 118,645 | 93,539 96,486 | 6,048 6,266 | 16,065 17,760 | 229,069 239,335 |
| Manitoba...................... . 1963 | 393 | 13,922 | 10.050 | 2,502 | 3,863 | 30,730 |
| 1964 | 276 | 13,321 | 10,371 | 2,388 | 3,630 | 29,986 |
| 1885 | 226 | 12,610 | 10,643 | 2,300 | 3,692 | 29.471 |
| Sakkatcbewan................. 1963 | 994 | 14,304 | 8,234 | 4,285 | 4,888 | 32,705 |
| 1964 | 836 | 13,600 | 8,573 | 4,189 | 4,730 | 31,928 |
| 1965 | 591 | 11,704 | 9,159 | 4,100 | 3,864 | 29,418 |
| Alberts...................... 1963 | 974 | 24, 893 | 14,797 | 4, 166 | 6,143 | 50.973 |
| 1965 | 8838 | 26,135 24,323 | 16,079 16,067 | 3,258 | 6,285 | 51,971 |
| Britieh Columbis, ............ 1963 | 102 | 8,51t | 25,183 | 773 | 1,389 | 35,958 |
| 1964 | 77 | 8,670 | 26,000 | 762 | 1,314 | 36,823 |
| 1965 | 67 | 8,375 | 27,981 | 750 | 1,12t | 38,294 |
| Totals................ 1963 | 3,425 | 285,358 | 224,295 | 27,105 | 49,984 | 590,237 |
| 1964 | 2,752 | 299,280 | 234,514 | 27,980 | 49,473 | 613,595 |
| 1965 | 2,112 | 310,967 | 245,298 | 27,167 | 50,361 | 635,940 |

1 Used in farm butter ooly.
${ }^{2}$ Includes values of ekim milk and buttermilk retained on farms.

Historically, butter was the residual product into which the summer milk was made for storage and use during the winter months. This still occurs, particularly in Prince Edward Island, Quebec and the Prairie Provinces where slightly over half the milk is made into butter.

In 1965, about $337,000,000 \mathrm{lb}$. of creamery butter and $4,000,000 \mathrm{lb}$. of farm butter were produced in Canada, accounting for $7,976,000,000 \mathrm{lb}$. of milk or about 44 p.c. of the national output. The demand for solids non-fat has encouraged farmers to ship increasing quantities of whole milk instead of farm-separated cream to the creameries. Whole milk used in butter manufacturing was estimated at $3,200,000,000 \mathrm{lb}$. in 1905 , more than the amount used in all other manufactured dairy products. Consumption per capita of creamery butter was 18.18 lb . compared with 18.54 lb . in 1964.

During the past ten years, cheese production has gradually increased, particularly in Ontario and Quebec. These iwo provinces in 1965 accounted for 95.9 p.c. of the total output. In that year, some $172,900,000 \mathrm{lb}$. of cheese were produced, which represented about $1,898,000,000 \mathrm{lb}$. of milk or approximately 10 p.c. of the total milk production. Exports of all cheese, mostly cheddar, amounted to $32,055,000 \mathrm{lb}$. compared with $31,658,000 \mathrm{lb}$. in 1964. Most of the Canadian exports of cheddar tradilionally originate in Ontario, which exports about 38 p.c. of its production.

## 18. -Production of Butter and Cheese, by Province, 1963-65



[^159]in 1965 , about $49,000,000 \mathrm{lb}$. less than in 1961. On the other hand, there is a rapidly expanding market for solids non-fat, in the form of dry skim milk and casein; in the period 1958-65, the quantity of whole milk from which these two products were made rose by $1,300,000,000 \mathrm{lb}$. to $3,700,000,000 \mathrm{lb}$. Casein production is concentrated in Quebec, about 93 p.c. of the national total originating in that province.

The importance of international trade in this sector of the industry is evident from the fact that of every 10 lb . of whole milk powder produced in Canada, nine are exported; of every 10 lb . of casein produced, seven are sold abroad; and of every 10 lb . of skim milk powder produced, four are exported. In normal years, export values of dairy products are three times as large as import values.

## 19.-Production of Concentrated Milk Products, 1961-65

(Exclusive of Newfoundland)

| Product | 1961 | 1962 | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | '000 lb. | '000 lb. | '000 lb. | '000 lb. | '000 lb. |
| Concentrated Whole Milk Products. | 393,805 | 363,566 | 383,675 | 384,942 | 377,268 |
| Condensed milk | 14,814 | 16,313 | 17,475 | 17,621 | 19,251 |
| Evaporated milk. | 324, 049 | 292,606 | 313,086 | 314,705 | 310,136 |
| Whole milk powder | 25,622 | 23,310 | 21,907 | 22,330 | 21,947 |
| Partly skimmed evaporated milk | 20,419 | 19,024 | 18,108 | 18,250 | 15,136 |
| Other whole milk products ${ }^{1}$....... | 8,901 | 12,313 | 13,099 | 12,036 | 10,798 |
| Concentrated Milk By-products. | 269,244 | 259,470 | 259,759 | 292,547 | 330,624 |
| Condensed skim milk......... | 1,918 | 1,816 | 1,346 | 1,060 | 1,232 |
| Evaporated skim milk | 6,210 | 5,335 | 7,073 | 7,382 | 7,494 |
| Skim milk powder... | 213,029 | 192,292 | 176,086 | 203, 047 | 222,157 |
| Powdered buttermilk | 9,833 | 10,323 | 10,149 | 9,740 | 9,141 |
| Whey powder. | 19,730 | 18,221 | 30,051 | 32,971 | 41,298 |
| Casein. | 14,024 | 22,197 | 21,426 | 20,150 | 23,153 |
| Other milk by-products ${ }^{2}$ | 4,500 | 9,286 | 13,628 | 18,197 | 26,049 |
| Totals. | 663,049 | 623,036 | 643,434 | 677,489 | 707,892 |

[^160]
## 20.-Production of Ice Cream Mix, by Province, 1963-65

| Province | 1963 | 1964 | 1965 | Province | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | '000 gal. | '000 gal. | '000 gal. |  | '000 gal. | '000 gal. | '000 gal. |
| Newfoundland.. | .. | . | . | Manitoba.............. | 1,389 | 1,503 | 1,505 |
| Prince Edward Island. . | 153 | 151 | 165 | Saskatchewan......... | 1,313 | 1,357 | 1,188 |
| Nova Scotia........... | 937 | 1,030 | 1,140 | Alberta. | 2,217 | 2,259 | 2,595 |
| New Brunswick........ | 617 | 659 | 722 | British Columbia...... | 2,576 | 2,636 | 2,908 |
| Quebec. | 5,673 | 6,452 | 6,684 |  |  |  |  |
| Ontario.. | 8,601 | 8,637 | 8,750 | Totals | 23,476 | 24,684 | 25,657 |

The estimated consumption of fluid milk and cream, on a milk basis, amounted to $4,745,166,000$ pt. in 1965, which was $62,912,000$ pt. higher than the 1964 estimate. Daily average consumption per capita amounted to 0.68 pt ., unchanged from the previous year. The estimated consumption of milk and cream is given by province in Table 21 and the domestic disappearance of all dairy products in Table 22.

21.-Estimated Consumption of Milk and Cream (expressed as Milk), by Province, 1963-65

| Province and Year | Estimated Consumption | Daily per Capita Consumption | Province and Year | Estimated Consumption | Daily per Capita Consumption |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | '000 pt. | pt. |  | '000 pt. | pt. |
| Newfoundland................ | .. | . | Manitoba............... 1963 | 265, 621 | 0.77 |
|  |  |  | 1964 | 264, 293 | 0.75 0.75 0.74 |
| Prince Edward Island.... 1963 | 32,438 | ${ }_{0}^{0.83}$ | 1965 | 259,706 | 0.74 |
| 1965 | 32,222 | 0.82 | 1963 | 270,565 | 0.79 |
|  |  |  | 1964 | 269,444 | 0.78 |
| Nova Scotia. ............. 1963 | $\begin{aligned} & 172,583 \\ & 171,393 \end{aligned}$ | 0.62 0.62 | 1965 | 269,656 | 0.78 |
| 1965 | 172,875 | 0.62 | Alberta . . . . . . . . . . 1963 |  | 0.76 |
| New Brunswick.......... 1963 | 138,587 |  | Alberta................. 1964 | 388,579 | 0.74 |
| New Brunswick........... 1964 | 136,397 | ${ }_{0}^{0.62}$ | 1965 | 390,912 | 0.74 |
| 1965 | 139,951 | 0.61 |  | 373,662 | 0.60 |
| Quebec................... 1963 | 1,289,508 | 0.65 | British Columbia....... 1964 | 384,003 | 0.60 |
| Queber............ 1964 | 1,309,627 | 0.64 | 1965 | 400,280 | 0.61 |
| 1965 | 1,322,431 | 0.64 |  |  |  |
| Ontario. . . . . . . . . . . . . . . 1963 | 1,692,667 | 0.72 | Totals............. 1963 | 4,624,413 | 0.69 |
| 1964 | 1,725,911 | 0.71 | 1964 | 4,682,254 | 0.68 0.68 |
| 1965 | 1,757,133 | 0.71 | 1965 | 4,745,166 |  |

22.-Domestic Disappearance of Dairy Products, 1963-65

| Product | 1963 |  | 1954 |  | 1965 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Total | $\begin{gathered} \text { Per } \\ \text { Capita } \end{gathered}$ | Total | $\begin{gathered} \text { Per } \\ \text { Capita1 } \end{gathered}$ | Total | Per Capita ${ }^{1}$ |
|  | ${ }^{\prime} 000 \mathrm{lb}$. | 1 b . | '000 lb. | $l \mathrm{l}$. | \%000 1b. | lb. |
| Milk and Cream. | 5,945,495 | 383.40 | 6,40,109 | 321.62 | 6,12t,372 | 320.38 |
| Milk. | 5,041.738 | 273.32 | 5,109,689 | 272.08 | 5, 188,953 | 271.59 |
| Cream ss milk | 923,757 | 50.08 | 930,420 | 49.54 | 932,319 | 48.79 |
| Cresm as product.... | 193,389 | 10.48 | 197,132 | 10.50 | 199,527 | 10.44 |
| Butter, | 361,790 | 19.11 | 366,781 | 19.03 | 364,762 | 18.61 |
| Creamery | 351,342 | 18.56 | 357,323 | 18.54 | 356,455 | 18.18 |
| Dairy. | 6,102 | 0.32 | 4,908 | 0.25 | 3,745 | 0.19 |
| Whey. | 4,346 | 0.23 | 4,550 | 0.24 | 4,562 | 0.24 |
| Cheese. | 157,149 | 8.34 | 166,565 | 8.64 | 136,526 | 9.02 |
| Cheddar | 61,578 | 3.25 | 65,625 | 3.40 | 65, 120 | 3.32 |
| Procese. | 64,638 | 3.42 | 68,824 | 3.57 | 75,303 | 3.84 |
| Other., | 30,983 | 1.63 | 32,117 | 1.67 | 36,503 | 1.88 |
| Concentrated Whole Milk Products | 361,245 | 19.08 | 353,091 | 18.32 | 349,164 | 17.81 |
| Evaporated. | 306, 472 | 16.19 | 302,546 | 15.70 | 299,633 | 15.28 |
| Condensed | 17,935 | 0.95 | 17,587 | 0.91 | 19,139 | 0.98 |
| Powdered. | 5,167 | 0.27 | 2,976 | 0.15 | 3,795 | 0.19 |
| Concentrated MHE By-products ${ }^{\text {a }}$, | 223,05s | 11.78 | 229,802 | 11.93 | 223,242 | 11.69 |
| Evsporated | 7,083 | 0.37 | 7, 348 | 0.38 | 7,556 | 0.39 |
| Condensed | 1,357 | 0.07 | 1,052 | 0.05 | 1.233 | 0.06 |
| Powdered. | 153,049 | 8.09 | 153,406 | 7.96 | 139,415 | 7.11 |
| Als Dairy Products in Terms of Mill: Butter. Cheese Cancentrated |  |  |  |  |  |  |
|  | 8,364,194 | 441.90 | 8,476,205 | 439.84 | 8,428, 888 | 429.95 |
|  | 1,534,818 | 8 Et 09 | 1,626,761 | 84.41 | 1,720,476 | 87.76 |
|  | 848,138 | 44.81 | 819,240 | 42.51 | 817,195 | 41.69 |
| Grand Totaks. | 17,211,937 | 917.58 | 17,452,282 | 913.80 | 17, 421,815 | 907.18 |

[^161]
## Subsection 6.-Fruits, Vegetables and Other Farm Products

Fruits.-Commercial fruit growing in Canada is confined almost exclusively to rather limited areas in the Provinces of Nova, Scotia, New Brunswick, Quebec, Ontario and British Columbia. Nova Scotia production is centred mainly in the Annapolis Valley and New Brunswick production in the St. John River Valley and Westmorland County. The fruit growing districts of Quebec are the Montreal area, the North Shore area, the Eastern Townships and the Quebec City district. Ontario fruit is grown in all the counties adjacent to the St. Lawrence River and the Great Lakes as far west as Georgian Bay, the Niagara district being the most productive. In British Columbia the four well-defined fruit areas are the Okanagan Valley, the Fraser Valley, the Kootenay and Arrow Lakes district and Vancouver Island. The climate elsewhere in Canada is not generally suitable for commercial tree-fruit culture. In most producing areas, particularly in the Annapolis Valley of Nova Scotia, the Niagara Peninsula of Ontario and the Okanagan Valley of British Columbia, fruit growing is either the principal or one of the most important forms of agriculture and is very important to the economy of those areas. Apples and small fruits are produced commercially in the provinces named but tender tree fruits and commercial vineyards are limited largely to Ontario and British Columbia.

Strawberries are grown commercially in all provinces for which tree-fruit statistics are prepared, as well as in Prince Edward Island. However, this crop is produced over a somewhat wider area than are tree fruits. In Nova Scotia, for example, considerable quantities of strawberries are grown in Colchester County and farther north, as well as in the apple producing areas of the Annapolis Valley. In British Columbia most of the strawberries are grown in the Fraser Valley.

Raspberries are grown commercially in Nova Scotia, New Brunswick and Quebec but the bulk of the crop is produced in Ontario and British Columbia. The Fraser Valley of British Columbia is the most important producing area.

Wild blueberries are harvested on a commercial scale in Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick and Quebec. This crop is indigenous to certain areas in these provinces and a large percentage of the crop is frozen and exported. There is also some production of cultivated blueberries, particularly in British Columbia.

A marketing system has been developed for distributing fresh fruit from the specialized production areas to all parts of the country and a large proportion of the deciduous fruit consumed in Canada is grown domestically. Considerable quantities of apples, strawberries and blueberries are exported.

Tables 23 and 24 show the estimated commercial production of fruit, by kind, for the years 1963-65 and by province for 1958-65.
23.-Estimated Commercial Production and Farm Value of Fruit, 1963-65

| Kind of Fruit and Year | Quantity | Weight | $\underset{\text { Varm }}{\text { Value }}$ | Kind of Frits and Year | Quantity | Weight | Farm Value |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | '000 ba. | ${ }^{\prime} 000 \mathrm{lb}$. | \$ 000 |  | '000 bu. | '000 Ib. | \$000 |
| Apples- |  |  |  | Plums and Prunes- |  |  |  |
| 1963. | 23.036 | 1,036,620 | 31,028 | 1963. | 700 | 35,000 | 1,434 |
| 1964. | 20,052 | 1902,340 | 31.588 | 1964. | 668 | 33,400 | 1,171 |
| 1965 | 22,316 | 1,004,220 | 31.007 | 1965, | 505 | 25, 250 | 1,209 |
| Apricots- |  |  |  | Raspberries $\rightarrow$ | '000 qt. |  |  |
| 1963. | 99 | 4,950 | 327 | 1963. | 12,604 | 18,018 | 3,906 |
| 1964. | 387 | 19,350 | 754 | 1964. | 13,785 | 19,750 | 3,854 |
| 1965. | 2 | 100 | 13 | 1965. | 13,680 | 19,688 | 4,173 |
| Cherries (sour) - |  |  |  | Stramberries- |  |  |  |
|  | 348 | 17,300 | 1.716 | 1963. | 24, 166 | 32,223 | 5.880 |
| 1964. | 604 | 30,200 | 2,003 | 1964. | 30,866 | 41,464 | 7.939 |
| 1965. | 444 | 22,200 | 1,621 | 1965. | 18,287 | 23.810 | 5,844 |
|  |  |  |  | Loganberries- | '000 lb. |  |  |
|  |  |  |  | 1983. | 1,461 | 1,461 | 231 |
| $\begin{aligned} & 1963 . \\ & 1964 . \end{aligned}$ | ${ }_{558}^{406}$ | $\begin{aligned} & 20,300 \\ & 27,800 \end{aligned}$ | 3.143 4.603 | 1883.... | 1,461 1,078 | 1,078 | 173 |
| 1985. | 242 | 12, 100 | 2,018 | 1965. | 991 | 991 | 168 |
| Peaches- |  |  |  | Grapes- |  |  |  |
| 1963. | 2,373 | 118,650 | B,933 | 1963. | 106, 760 | 106,760 | 5,739 |
| 1964. | 2,862 | 113, 109 | 8,128 | 1964. | 119,595 | 119.595 | 8,015 |
| 1965. | 1,606 | 80,300 | 5,532 | 1965. | 126,012 | 126,012 | 5,440 |
| Pears- |  |  |  | Blaeberries- |  |  |  |
| 1963. | 1.688 | 84,400 | 3.999 | 1983. | 23,954 | 23,954 | 2,795 |
| 1964. | 1.999 | 99, 950 | 3.942 | 1964. | 20.861 | 20,86! | 3,603 4,452 |
| 1985. | 1,065 | 53, 250 | 2,661 | 1985 | 18,145 | 18,145 | $4{ }_{4} 45$ |

## 24.-Value of Commercial Fruit Produced, by Province, 1963-65, with Average for 1958-62

(Farm value for unpacked Iruit)

| Province | $\begin{gathered} \text { Average } \\ 1058-62 \end{gathered}$ | 1963 | 1964 | 1985 |
| :---: | :---: | :---: | :---: | :---: |
|  | \$000 | \$/000 | \$'000 | \$'000 |
| Newioundland................................................... | 148 | 105 | 83 | 680 |
| Prince Edward Island. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 331 | 357 | 393 | 392 |
| Nova Scotia. ................................................. | 2,890 | 4,017 | 3,903 | 5,360 |
| New Brungwick. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 1,234 | 1,425 | 1,514 | 1,573 |
| Quebeo. | 7,161 | 11,009 | 11,023 | 9,351 |
| Ontario. | 22,247 | 27,195 | 31,990 | 28,421 |
| British Columbia. | 18,702 | 23,170 | 25,048 | 18,602 |
| Totals. | 56,813 | 67,278 | 73,554 | 64,379 |

Vegetables.-Estimates of acreage and production of commercial vegetables in Canada are prepared for all provinces except Newfoundland and Saskatchewan; only partial estimates were prepared for Prince Edward Island until 1965. Ontario is the largest producer, followed by Quebec and British Columbia. A wide variety of crops is grown in these three provinces and a somewhat smaller range in the Maritimes and in the Prairie Provinces.

Canning, freezing and processing of vegetables are carried on in the important producing areas. The estimates in the following tables cover output of commercial growers for processing and for sale on the fresh market but do not include acreages or production of vegetables grown for home use on farms or elsewhere.

## 25.-Estimated Commerclal Acreage of Vegetables, by Province, 13.3-\&5 with Average for 1958-62

| Province | Av. 1958-62 | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: |
|  | acres | acres | acres | acres |
| Prince Edward Island. . | . | $\ldots$ | . | 210 |
| Nova Scotisal. | 3,300 | 4,540 | 5,170 | 4,380 |
| New Brunswick ${ }^{\text {. }}$ | 4,750 | 7,620 | 10,380 | 9,040 |
| Quebec. | 65,280 | 75,440 | 83,170 | 75,530 |
| Ontario. | 104,980 | 103,360 | 115,470 | 110.510 |
| Manitoba' | 3,570 | 3,780 | 3,820 | 4,010 |
| Alberta? | 15,070 | 15,580 | 16,000 | 13,010 |
| British Columbia. | 15,880 | 14,250 | 13,490 | 17.390 |
| Totats. | 212,630 | 224,520 | 247,500 | 249,030 |

[^162]25.-Estimated Commerclal Acreage and Production of Vegetables, 1969-65 with Average for 1958-62

| Vegetable | Av. 1958-62 |  | 1963 |  | 1064 |  | 1965 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Area | Production | Area | Production | Area | Production | Area | Production |
|  | acres | '000 lb. | acres | '000 lb. | 日crea | '000 lb. | acres | '000 Ib. |
| Asparagus... | 3,840 | 7.265 | 4,180 | 6.540 | 4,030 | 5,775 | 3, 820 | 5,888 |
| Beans.. | 12.700 | 50,277 | 23, 1040 | 79,373 | 28,020 | 98,406 | 23,000 | 95,999 |
| Bexts. | 3.010 | 81, 144 | 2,780 | 51,601 | 3,220 | 57, 104 | 2,710 | 44,750 |
| Cabbagel | 6,900 | 130.335 | 7,130 | 147,908 | 7,420 | 136.605 | 7,350 | 143.365 |
| Carrotst. | 12,060 | 277, 869 | 13, 10 | 344,824 | 14,270 | 351, 427 | 15,440 | 300,627 |
| Caulifower | 2,760 | 29,084 | 3,110 | 26,649 | 3.150 | 33,770 | 3,320 | 37, 490 |
| Celery | 1,310 | 43,135 | 1.200 | 44,918 | 1,110 | 40,504 | $1+050$ | 42, ${ }^{332}$ |
| Corni.. | 55,120 | 348,215 | 50,550 | 324,556 | 52.180 | 389.417 | 53,800 | 409,753 |
| Lettuce. | 5.510 | 64,862 | 4,790 | 54,071 | 4,890 | 57.067 | 3,140 | 57,455 |
| Oniona | 7,860 | 162, 434 | 9,850 | 256,854 | 9.590 | 215,723 | 10,300 | 288,966 |
| Parsnips | - 720 | 11.984 |  | 13,027 | - 580 | 9. 554 | 680 | 13,779 |
| Peag ${ }^{\text {Spinach }}$ | 45,020 | 100, 346 | 52,190 | 113,858 | 61.280 | 138,328 | 55,310 | 163,585 |
| Spinach.... | 1,140 39,560 | 12,162 814,340 | 1,120 31,070 | 11,033 695,393 | 1,090 34,360 | 12.642 772.748 | 1,070 $\mathbf{3 4 , 7 3 0}$ | 11,457 899,157 |
|  |  |  |  |  |  |  | 34,730 | 899,157 |

[^163]Tobacco.-Canada produces several types of leaf tobacco but by far the most important is the flue-cured or Bright Virginia type. This is grown mainly in Ontario, along with considerable quantities of burley and smaller amounts of dark (air-cured and firecured) tobacco. Quebec produces smaller quantities of these types as well as some cigar and pipe tobacco and small flue-cured acreages are also harvested in Prince Edward Island, Nova Scotia and New Brunswick. In 1965, increased plantings of fue-cured tobacco in Ontario from 73,479 acres to 86,870 acres was the principal reason for the production of a slightly larger total crop than in 1964; the crop increased in volume approximately $18,000,000$ lb . to slightly over $154,000,000 \mathrm{lb}$.

A study of Department of National Revenue reports on tax-paid withdrawals of tobacco products reveals changes in the smoking habits of Canadians during the past three decades. In 1922, the first year for which comparable figures are available, Canadian annual per capita consumption of cigarettes was 229 ; by 1959 the annual per capita consumption (calculated on the basis of total population) had increased to 1,939, by 1964 to 2,113 and by 1965 to 2,198 .

## z\%.-Acreage, Production and Vakue of the Commercial Crop of Leaf Tobaceo, by Province, 19世1-65

| Year | Quebec |  |  | Ontario |  |  | Other Provinces |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Har- } \\ & \text { vested } \\ & \text { Area } \end{aligned}$ | Production | Value | Harvested Area | Production | Value | Harvested Area | Pro. duction | Value |
|  | acres | '000 lb. | * | acres | '000 lb. | \% | acres | ${ }^{\prime} 000 \mathrm{lb}$. | 1 |
| 1981. | 11,081 | 11,900 | 4,156,000 | 126.718 | 197, 604 | 101,059,000 | 118 | 157 | 80,000 |
| 1962... | 8,901 | 12,388 | 4,582,000 | 121,840 | 190,265 | 91,165,000 | 515 | 374 | 157,000 |
| 1963. | 8,933 | 10,776 | 4,046,000 | 104,178 | 189,719 | 86, 279,000 | 782 | 649 | 308,000 |
| 1964. | 8,334 | 9,919 | 4,299,000 | 76,267 | 142,738 | 78.350,000 | 715 | 757 | 429,000 |
| 1965. | 9.348 | 9,272 | 3,961,000 | 89,220 | 158,810 | 101,765,000 | 776 | 798 | 472,000 |

## 28.-Acreage, Production and Value of the Commercial Crop of Leal Tobacco, by Main Type, 1961-65

| Type of Tobacco and Year | Harveated Ares | Aversce Yield acre | Total Production | Average Farru per lb. | Gross <br> Farm Vilue |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | acres | lb. | lb. | cte. | \$ |
| Floc-ctred............................... ${ }_{1962}^{1961}$ | 127.844 | 1,529 1.538 | $195.441,000$ $187,621.000$ | 51.6 48.3 | 100.870 .000 90.576 .000 |
| 1962 1963 | 122.405 | 1.533 1,764 | $187,621.000$ $186,648,000$ | 48.3 45.9 | $90,576,000$ $85.706,000$ |
| 1964 | 79,639 | 1,798 | 143, 197,000 | 55.6 | 79, 533,000 |
| 1965 | 93,523 | 1,702 | 159,185,000 | 64.6 | 102,816.000 |
| Burley................................ . 1981 | 3,681 | 1,770 | 6.516,000 | 37.2 | 2,426,000 |
| Butey ...............................1961 1962 | 4.569 | 1,952 | 8,918,000 | 40.4 | $3,604,000$ |
| 1983 | 4,241 | 3,844 | $8.308,000$ | 34.1 | 3.471 .000 |
| 1964 | 2,398 | 3,638 | 5,317,000 | 30.7 | 2,052,000 |
| 1965 | 1,939 | 2,054 | 3,982,000 | 44.7 | 1,780,000 |
| Cizar leal................................ . 1961 | 4,418 | 1,284 | 5,584,000 | 25.0 | 1,397,000 |
| Cisar lear................................ 1962 | 3,055 | 1.716 | 8,242.000 | 25.0 | 1,311,000 |
| 1963 | 2,567 | 1,625 | 4.171.000 | 24.0 | 1,002,000 |
| 1964 | 2.318 | 1,500 | 3,477,000 | 26.0 | 904,000 |
| 1985 | 3,108 | 1,461 | 4,840,000 | 25.3 | 1,147,000 |
| Totalsp......................... . 1961 | 137,917 | 1,521 | 269,721,008 | 60.2 | 105. 2885.000 |
| (1962 | 131,053 | 1,\$18 | 208,027,090 | 47.2 | 95,904, 000 |
| 1963 | 113.893 | 1,755 | 241.144,000 | 45.1 | 30.633.400 |
| 1954 | 85,316 | 1,798 | 153.414.098 | $\underline{54.2}$ | 83,118.000 |
| 1965 | 33,344 | 1,700 | 168,890, 000 | 6 6.3 | 106,188,00* |

1 Includes other types not speoified.
Eggs.-Egg production in 1965 at 432,795,000 doz. was 1.2 p.c. lower than the output of 1964 and 3.4 p.c. lower than the record production in 1959 , which amounted to $448,200,000$ doz. The number of layers decreased slightly and the rate of lay per 100 layers dropped to 20,012 from 20,095 . The farm selling price of eggs averaged 36.3 cents per doz. compared with 32.7 cents in 1964 so that, despite the lower production, there was an increase in total value of eggs produced. The three Maritime Provinces produced 7.3 p.c. of all eggs in 1965; Quebec, 17.8 p.c.; Ontario, 39.4 p.c.; the Prairies, 24.2 p.c.; and British Columbia, 11.3 p.c.
23.-Production, Utillzation and Value of Farm Eggs, by Province, 1964 and 1985

| Province | 1964 |  |  |  | 1965 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Average Number of Layers | Average Production per 160 Layera | Net Eggs Laid ${ }^{1}$ | Total <br> Value <br> (Sold <br> and <br> Used) | Average Number of Layers | Aversge Production per 100 <br> Layers | Net Egg: Laid | Total Value (Sold and Used) |
|  | '000 | No. | '000 doz. | \$'000 | '080 | No. | '000 doz. | \$'000 |
| Prince Edward Ieland. | 257 | 19,289 | 4.079 | 1.357 | 262 | 18,205 | 3,944 | 1,341 |
| Nova Scotia.......... | 1,027 | 21,615 | 18,278 | 6,217 | 1,037 | 21,555 | 18.450 | 7, 424 |
| New Brunswich | +588 | 20, 114 | 9.713 | 4,080 | ${ }_{4} 563$ | 19,795 | 9.189 | 4,092 |
| Ontario. | 4,878 10,220 | 19,780 20.928 | 71,520 | 26,684 <br> 58 <br> 179 | ${ }_{10}^{4,563}$ | 20,407 | 77,013 | 31,078 |
| Manitobs | 2,658 | 20.928 19.570 | 177,023 42.878 | 58, 11,564 | 10,018 2,623 | 20,558 19.615 | 170,701 42.584 | 62,307 13,036 |
| Sapkatchewsn. | 1,239 | 17,607 | 28,089 | 7,746 | 1,753 | 17,551 | 42,379 | 13,036 7.682 |
| Alberta. | 2,589 | 18.170 | 38,574 | 10.748 | 2,493 | 17, 837 | 36,854 | 11.765 |
| British Columbia | 2.745 | 21,025 | 47,752 | 15,934 | 2,835 | 20,829 | 48,881 | 18,220 |
| Totak, | 26,399 | 20,095 | 437,946 | 143,119 | 36,147 | 20,012 | 433,795 | 156,945 |

[^164]Wool.-Canada produces only about one tenth of her total wool requirements; imports in 1965 were $65,222,000 \mathrm{lb}$., about 5 p.c. more than in 1964 . Exports were $4,236,000$ lb. compared with $3,223,000 \mathrm{Jb}$. in 1964 . The apparent domestic consumption of wool shown in Table 30 is determined on the basis of production, exports and imports but does not take into consideration changes in stocks for which the data are not available. Difierences in wool utilization from year to year are therefore probably less marked than is indicated by these figures.

## 30.-Production and Apparent Consumption of Wool, 1961-65

| Item | 1801 | 1962 | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Shorn Wool Produced- |  |  |  |  |  |
| Yield per fleece.................................. ${ }^{\mathbf{l b}}$. | 7.8 | 8.0 | 7.9 | 8.0 | 7.8 |
| Total yield........................... . . . . . . . . . . 0000 lb . | 6,169 | 5,808 | 5,259 | 5.065 | 4,646 |
|  | 50.2 3.094 | 69.3 2.862 | 51.9 2.728 | 51.5 2.611 | 47.3 2.196 |
| Pulled Wool Produced... . . . . . . . . . . . . . . . . . . . . . . . 0000 lb . | 1287 | 1361 | 15 | 1881 | , 62 |
| Totals, Wool Production. . . . . . . . . . . . . . . . . . . . . . . . '000 ]b. | 7,456 | 7,169 | 6.812 | 6,346 | 5,808 |
|  |  |  |  |  |  |
| Apparent wool conaumption ${ }^{\text {2 }}$. . . . . . . . . . . . . . . . . . . . '000 lb. | 56,819 | 57,505 | 61,956 | 64,977 | 66,794 |

[^165]Honey.-As shown in Table 31, honey production was 34 p.c. higher in 1965 than in 1964 and established an all-time record for Canada. The number of colonies and the average yield per colony were both bigher than in 1964.

Honey is produced commercially in all provinces except Newfoundland and yields tend to vary considerably from year to year. In 1965, Alberta was the largestproducer, surpassing Ontario which had the highest production in 1964. Honey bees are kept in some of the fruit growing districts for purposes of pollination and are also used for the pollination of certain seed crops.

To facilitate storage, shipment and uniformity of quality, large quantities of Canadian honey are pasteurized. Beekeepers' marketing co-operatives are active in several provinces. In $1965,7,900,000 \mathrm{lb}$. of honey valued at $\$ 2,070,000$ were exported from Canada, the main countries of destination being Britain, West Germany, Belgium and Luxembourg, Norway, Japan and the United States.

## 31.-Honey and Beeswax Production 1965-85, with Average for 1958-62

| Item | AV. 1958-62 | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: |
| Honey- |  |  |  |  |
|  | 31, 407 | 42,142 | 36,662 96 | 49,157 |
|  | 5,245 | 7,538 | 6,655 | 8,665 |
| Beeswax- |  |  |  |  |
|  | 464 | 624 | 544 | 733 340 |
| Value........................ . . . . . . . . . . . . . . . . . . . . . $\mathbf{\$}^{\prime} 000$ | 212 | 282 | 252 | 340 |
| Total Value, Honey and Beeswax........... \$\%00 | 5,457 | 7,82\% | 6,907 | 9, $\times{ }^{\circ}$ |
| Beekeepers............................................ . . . . | 12,836 | 10,360 | 10,780 | 10,350 |
| Bee colonjes. | 333,624 | 360,060 | 382,240 | 413,030 |

82.-Fioney Production, by Province, 1908-\&5, with Average for 1958-6\%

| Province | Av. 1858-62 | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: |
|  | ${ }^{*} 000 \mathrm{lb}$. | '000 lb. | '000 lb. | ${ }^{\prime} 000 \mathrm{lb}$. |
| Prince Edward Island. | 57 | 64 | 54 | 56 |
| Nova Scotia. | 177 | 218 | 197 | 303 |
| New Brunswick. | 80 | 125 | ${ }^{9}$ | 86 |
| Quebec. | 2,951 | 4,125 | 2,592 | 2,392 |
| Ontario. | 9,423 | 11,000 | 11,000 | 9,800 |
| Manitoba. | 5,776 | 7,285 | 5,822 | B,930 |
| Saskatehewan. | 3,847 | 6,100 | 5,500 | 6,300 |
| Alberta. | 7,342 | 11,600 | 9,800 | 20,050 |
| British Columbia. | 1,754 | 1,630 | 1,600 | 4,240 |
| Totals. | 31,407 | 42,142 | 3¢,662 | 49,157 |

Sugar Beets and Beet Sugar.-Sugar beets are grown commercially in Quebec, Ontario, Manitoba and Alberta and beet sugar factories are located in these provinces. In Quebec, commercial production is centred in the St. Hilaire area of the Eastern Townships; in Ontario, production is confined to the southwestern section of the province. Alberta produces the largest crop and in that province sugar beets are grown under irrigation.
33.-Acreage, Yield and Value of Sugar Beets and Quantity and Value of Beet

| Year | Sugar Beets |  |  |  |  | Beet Sugar (All Types) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\underset{\substack{\text { veated } \\ \text { Area }}}{\text { Har- }}$ | Yield per Acre | Total Yield | Ayerage Price per Ton | Total Value | Shipments | Value |
|  | acres | tons | tons | \$ | \$ ${ }^{\mathbf{0}} 00$ | '090 lb. | 8000 |
| 1961. | 84,927 | 13.02 | 1,105,708 | 13.13 | 14,515 | 283,675 | 21,535 |
| 1962. | 84,677 | 13.06 | 1,105,704 | 19.00 | 21,004 | 284, 236 | 20,791 |
| 1963. | 95,223 | 13.50 | 1,285.747 | 18.34 | 23,586 | 290,288 | 33,198 |
| 1964. | 101,312 | 12.81 | 1,297,912 | 14.71 | 19,091 | 307,652 | 37,033 |
| 1965. | 85,023 | 13.44 | 1,142,341 | . |  | 327,288 | 23,626 |

Maple Sugar and Maple Syrup.-Maple syrup is produced in the Provinces of Nova Scotia, New Brunswick, Quebec and Ontario. The bulk of the crop comes from the Eastern Townships of Quebee, a district famous both in Canada and in the United States as the centre of the maple products industry. Virtually all of the maple products exported are sent to the United States with the larger proportion moving as sugar, although substantial quantities of syrup are also shipped. Much of the syrup sold in Canada is marketed in one-gallon cans direct to the consumer from the producer but a considerable amount of both sugar and syrup is sold each year to processing firms.

## 34.-Production of Maple Sugar and Maple Syrup, by Province, 1963-65, with Arefage for 1958-6\%

| Province and Year | Maple Sugar |  | Maple Syrup |  |  | Total Value, Bugar and Syrup |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity | Value | Quantity | Average Price per gal. | Value |  |
|  | lb. | \$ | gal. | \$ | \$ | \$ |
| Nova Scotig- |  |  |  |  |  |  |
| Av. 1958-62.. | 13,000 | 8,000 | 4,000 | 5.75 | 23,000 | 31,000 |
| 1963.......... | 10,900 1,500 | 7,000 1,000 | 3,600 1,400 | 5. 56 | 20, 000 | 27,000 |
| 1964. | 1,500 8,380 | 1,000 6,000 | 1,400 3,240 | 5.71 6.17 | 8,000 20,000 | 9,000 |
| New Brunswick- |  |  |  |  |  |  |
| Av. 1958-62. | 50,000 | 31,000 | 10,000 | 5.30 | 53,000 | 84,000 |
| 1963. | 32,000 | 21,000 | 7,800 | 5. 38 | 42,000 | 63.000 |
| 1964. | 11,150 | 8,000 | 4,600 | 5.87 | 27,000 | 35,000 |
| 1965. | 40,180 | 32,000 | 12,000 | 6.33 | 76,000 | 108,000 |
| Quebec- |  |  |  |  |  |  |
| Av. 1958-62. | 561,000 | 257,000 | 2.169,000 | 3.67 | 7,963,000 | 8,220,000 |
| 1963. | 669,000 | 361,000 | 2,488,000 | 3.94 | 9, 803,000 | 10, 164,000 |
| 1964. | 457,000 | 256,000 | 1,561,000 | 4.13 | 6, 447,000 | 6,703,000 |
| 1965 | 436,000 | 244,000 | 1,957,000 | 4.15 | 8,122,000 | 8,366,000 |
| Ontario- |  |  |  |  |  |  |
| Av. 1958-62. | 19,000 | 12.000 | 278,000 | 5.02 | 1,396,000 | 1,408,000 |
| 1983. | 7,800 | 6,000 | 219,000 | 5.21 | 1,141,000 | 1,147,000 |
| 1964. | 7,960 | 6,000 | 155,000 | 5.40 | 1.837,000 | 1843,000 |
| 1965. | 9.920 | 8,000 | 187,000 | 5. 60 | 1,047,000 | 1,055,000 |
| Tetals- |  |  |  |  |  |  |
| AF. 1588-62. | 643,004 |  |  |  |  | 8,748,400 |
| 1963. | 719,700 | 395,000 871,040 | 2,718,460 | 4.05 | 11, 006,000 | 11,401, ${ }^{\text {cow }}$ |
| 1964. | 477,610 | \% 211,040 | li,72t,00t | 4.85 | 7,319,000 | 7,590,400 |

Nursery Stock.-Statistics concerning the nursery industry in Canada for recent years are presented in Tables 35 and 36. All nurseries were asked to report quantities sold of stock propagated during these years; stock purchased from other nurseries in Canada was excluded to prevent duplication. A total of 234 nurseries reported shipments in 1964. Wholesale value of nursery stock shipments of fruit trees, etc., amounted to $\$ 683,619$ compared with $\$ 581,059$ in the previous year, and shipments of ornamental species to $\$ 4,886,103$ compared with $\$ 4,225,891$.
36.-Nursery Stock Shipments (Domestic), by Type, 1960-64

| Classification | 1060 | 1981 | 1962 | 1983 | 1964 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Frult Trees, etc- | No. | No. | No. | No. | No. |
| Apple species. | 300,729 | 378,093 | 315, 528 | 259.736 | 303,627 |
| Tender treefruit species | 256.185 | 264, 197 | 235, 468 | 304,880 | 242,545 |
| Small fruit epeciea. . . . | 5,361.022 | 5,502,671 | 4.753,971 | 4,801,390 | 5, 1888.499 |
| Other species...... | 219,527 | 338,375 | 239,040 | 238,237 | 218,030 |
| Ornamental Species- |  |  |  |  | 1,416,481 |
| Rose bushes.................... | 2.001,121 | 1,444,440 | 1,399,399 | 1,566,679 | 1,416,283 |
| nous trees....................... | 4,908, 373 | 4,343,288 | 4,695,962 | 3,998.417 | 8,401,969 |
| Evergreen trees. . . . . . . . . . . . . . . . | 1,292,029 | 1,759.369 | 1,377,015 | 1.488.811 | 1,527,724 |
| Ornamental climbers............ | 44,418 | 213, 829 | 58,387 6,124 | 60.289 25.394 | 69,571 8,083 |
| Hybrid teas on standards (roses).. | B, 167 | 29,009 | 6,124 | 25,394 | 8,063 |

36.-Acreage of Nursery Stock, by Province, 1962-64

| Province | 1962 |  | 1963 |  | 1984 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Fruit Specie | Ornamental Species | Fruit Species | Ornamental Species | Fruit Species | Oraments Species |
|  | acres | acres | acres | scres | acres | acres |
| Quebec ${ }^{1}$. | 34 | 254 | 24 | 322 | 2.307 | 308 |
| Ontario...... | 364 | 2,583 | 2,311 | 2,526 | 457 | 2,949 |
| Prairie Provinces. . | 95 | 508 | 77 | 545 | 68 | 758 |
| Britigh Columbis... | 108 | 218 | 70 | 1,531 | 63 | 211 |
| Totals.. | 001 | 3,573 | 2,483 | 1,524 | 2,885 | 4,227 |

Includes the Maritime Provinces for which insufficient information wes reported.

Greenhouse Operations.-Annual surveys are made of greenhouse operations. Resulting figures are based on data reported by firms and individuals returning questionnaires, with the exception of that for cucumbers and tomatoes grown in Essex County of Ontario (the most important producing area), which are based on information obtained from the local co-operative marketing agency. Only greenhouses used for the production of items for sale are included in the survey.

## 37.-Greenhouse Operations, by Province, 1564, with Totals for 1960-44

| Province | Firms Reportivg | Area |  |  | Value of Sale (Wholesale) |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Under Glass | Under Cloth | Open Field | Cut Fiowers and Potted Plants | Vegetablea | Plants- <br> Rooted Cuttings. etc., for Growing On | Total Sales |
|  | No. | sq. ft . | sq. it. | acres | * | * | \$ | \$ |
| Nid. | 5 | 25, 120 | - | 1.5 | 50,593 | 1,590 | 17,435 | 69.618 |
| N.B. | 53 | 864,949 | 1,040 | 8.1 | 924,972 | 291,919 | 56,736 | 1,273.627 |
|  | ${ }^{25}$ | 217, 857 | 750 | 11.5 | 357, 302 |  | 35,174 | 392, 776 |
|  | 597 | 15,661,196 | 15,600 | 61.9 | 2,089,167 | 61,717 | 242,381 | 2,383,265 |
| Man. | $\stackrel{2}{29}$ | $15,661,190$ 170,390 | 422,225 13 | 385.6 10.3 | $10,982,225$ 150,826 | 6,072,138 | 2.791 .300 89 | $\begin{array}{r}19,845,863 \\ \hline 240313\end{array}$ |
| Sask. | 14 | 226,458 | 12,000 | 24.2 | 191,684 | 12,936 | 89,487 | 240,313 |
| Alta. | 44 | 1.757,960 | 150 | 36.0 | 1,545, 092 | 131,062 | 297,291 | 1,973,445 |
| B.C. | 265 | 3,880,800 | 2,189 | 277.0 | 3,277,279 | 1. 153,950 | 605,757 | 5,036,986 |
| Totals, 194. | 1,136 | 24,026,273: | 468,284 | 816.1 | 13,569,140 | 7,715,312 | 4,224,313 | 31,508,765 ${ }^{\text {s }}$ |
| 196. | 1,195 | 28, $735,418{ }^{3}$ | 437,671 | 8 87. 8 | 17,851,022 | 6,818,438 | 3,494,438 | 28, 241,1244 |
| 19 c |  | 15,744,129 | 408,979 | 206.9 | 16,391,108 | 5,059,615 | 2,767, 547 | 24,213,270 |
| 1561. | 1,074 | 18,474, 888 | 435,912 | 3,164.0 | 15, 668,154 | 4,389,160 | 2,341,156 | 22,388,410 |
| 1580. | 1,045 | 15,672,066 | 453,718 | 2,244.6 | 14,899,047 | 4, 15,204 | 2,502,170 | 21,416,501 |

[^166]
## Subsection 7.-Prices of Agricultural Products

The monthly index of farm prices of agricultural products was designed to measure changes occurring in the average prices farmers receive at the farm from the sale of farm products. In comparing current index numbers with those before August 1965, certain points should be considered. Western grain prices used in the construction of the index before Aug. 1, 1965 are final prices for all grains. For the remaining months of 1965 , the western grain prices used in the index are initial prices. Subsequent participation payments made on the 1965 crops will be added to the prices currently used and the index revised upward accordingly.

## 38.-Average Inder Numbers of Farm Prices of Agricultural Products, by Province, 1561-66, and Monthly Inderes for 1964 and 1965

$(1935-38=100)$
Note-A deseription of this indes, its coverage and the methods used will be iound in DBS Quarterly Bulletin of Agricultural Statistias (Catalogue No. 21-003) for October-December 1946. Monthly prices of grain and of tivestock sre carried in the current isoues of the same publication.

| Year and Month | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Avera |  |  |  |  |  |  |  |  |  |  |
| 1961. | 198.3 | 225.2 | 220.4 | 274.3 | 265.3 | 251.9 | 251.3 | 265.8 | 276.1 | 261.8 |
| 1962. | 136.7 | 231.0 | 215.4 | 275.9 | 273.8 | 278.3 | 265.2 | 383.2 | \$84.6 | 272.0 |
| 1963. | 214.3 | 232.8 | 223.2 | 274.5 | 273.6 | 368.1 | 258.1 | 377.6 | 278.2 | 268.4 |
| 1964 | 255.1 | 2385 | 245.4 | 280.5 | 269.5 | 261.5 | 253.5 | 271.1 | 273.1 | 265.8 |
| 1965 | 332.6 | 259.4 | 302.0 | 307.5 | 283.4 | 252.6 | 234.0 | 257.5 | 294.7 | 378.2 |
| 1804 |  |  |  |  |  |  |  |  |  |  |
| January. | 215.2 | 220.6 | 214.6 | 275.8 | 266.3 | 261.3 | 258.4 | 273.8 | 267.9 | 264.2 |
| February | 201.4 | 218.3 | 211.7 | 275.1 | 268.7 | 263.3 | 258.9 | 275.5 | 269.3 | 265.3 |
| March. | 185.2 | 219.8 | 210.5 | 274.0 | 267.2 | 266.4 | 260.3 | 277.7 | 271.1 | 265.7 |
| April. | 225.9 | 223.2 | 223.6 | 271.4 | 266.5 | 265.0 | 260.5 | 277.8 | 274.1 | 266.0 |
| May. | 279.1 | 230.8 | 252.5 | 271.8 | 269.5 | 264.7 | 260.0 | 278.1 | 272.8 | 268.1 |
| June. | 371.3 | 248.3 | 330.2 | 283.4 | 274.2 | 266.0 | 259.4 | 280.1 | 273.3 | 274.2 |
| July.. | 333.6 | 250.2 | 298.8 | 282.1 | 272.6 | 263.1 | 259.7 | 279.7 | 275.8 | 272.4 |
| August. | 291.0 | 238,3 | 242.2 | 283.2 | 271.4 | 260.9 | 251.3 | 270.1 | 273.5 | 266.4 |
| September. | 200.0 | 230.7 | 219.0 | 279.4 | 271.4 | 262.1 | 249.0 | 267.9 | 274.4 | 263.7 |
| October | 229.0 | 235.4 | 226.4 | 287.9 | 265.2 | 255.8 | 243.4 | 259.9 | 273.8 | 260.1 |
| November. | 239.6 | 234.5 | 241.5 | 288.9 | 269.5 | 255.5 | 240.6 | 255.9 | 275.1 | 260.5 |
| December. | 273.8 | 240.0 | 270.5 | 292.5 | 271.6 | 253.8 | 240.8 | 256.9 | 275.6 | 262.8 |
| 1845 |  |  |  |  |  |  |  |  |  |  |
| January... | 313.7 | 242.9 | 287.7 | 294.8 | 273.6 | 255.4 | 241.4 | 255.2 | 278.8 | 264.5 |
| February. | 319.1 | 257.8 | 301.5 | 302.3 | 282.0 | 257.1 | 242.8 | 260.4 | 280.4 | 270.5 |
| March. | 310.2 | 255.9 | 295.2 | 301.5 | 280.0 | 261.3 | 245.6 | 262.3 | 292.0 | 271.0 |
| April. | 360.6 | 262.3 | 324.1 | 298.9 | 282.3 | 262.2 | 246.4 | 263.7 | 299.3 | 873.4 |
| May. | 373.3 | 266.3 | 349.0 | 302.8 | 286.1 | 264.4 | 247.6 | 265.8 | 301.2 | 276.6 |
| June.. | 420.4 | 279.3 | 381.5 | 312.2 | 297.8 | 271.9 | 252.8 | 276.3 | 303.6 | 286.6 |
| July.. | 483.3 | 291.7 | 383.1 | 316.8 | 304.2 | 270.9 | 254.0 | 278.5 | 315.0 | 291.1 |
| August. | 329.6 | 262.4 | 273.3 | 306.8 | 298.2 | 239.3 | 215.6 | 243.6 | 289.8 | 265.0 |
| September. | 232.8 | 242.8 | 226.2 | 301.6 | 296.4 | 239.1 | 217.0 | 243.3 | 289.3 | 261.6 |
| October... | 290.1 | 252.5 | 280.1 | 313.8 | 298.3 | 234.6 | 213.6 | 243.9 | 291.3 | 264.6 |
| November. | 283.0 | 249.2 | 263.1 | 315.6 | 305.7 | 234.1 | 218.6 | 243.4 | 290.2 | 266.4 |
| December.. | 275.5 | 250.1 | 258.0 | 323.3 | 318.9 | 241.3 | 217.2 | 253.8 | 295.3 | 274.7 |

## 39.-Average Cash Prices per Bushel of Major Canadian Grains, Crop Years Ended July 31, 1956-65

(Basis, in store Fort William-Port Arthur)

| Year Ended July 31- | Averages in Cents and Eighths per Bushel |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Wheat, ${ }^{1,2}$ No. 1 N. | Oats, ${ }^{1}$ <br> No. 2 C.W. | Barley, ${ }^{1}$ No. 3 C.W. -6 Row | Rye, ${ }^{3}$ <br> No. 2 C.W. | Flaxseed, ${ }^{3}$ <br> No. 1 C.W. |
|  | cts. | cts. | cts. | cts. | cts. |
| 1956. | 174 | $83 / 5$ | ${ }_{116}^{114 / 3}$ | $110 / 1$ $119 / 7$ | 360/1 |
| 1957.. | $168 / 1$ $162 / 3$ | $80 / 6$ $76 / 3$ | 116 | ${ }_{106}^{119 / 7}$ | ${ }_{303}^{298 / 4}$ |
| $1958 .$. | 166/3 | 77/6 | 109/7 | 108 | 302 |
| 1960. | 165/7 | 82/4 | 108/1 | 109/7 | 334/2 |
| 1961.. | 167/4 | 81/2 | 107/5 | 105 | 311/4 |
| 1962. | 189/7 | $96 / 1$ | 143/7 | 136/6 | 368/2 |
| 1963. | 196/1 | $81 / 6$ | 130/6 | 137/2 |  |
| 1964. | 203/3 | 78/5 | 123/4 | 146/7 | 319/6 |
| 1965. | 198/4 | 83 | 133/2 | 125/4 | 320/3 |

${ }^{1}$ Canadian Wheat Board daily fixed prices.
${ }^{2}$ International Wheat Agreement and domestic sales.
${ }^{3}$ Winnipeg Grain Exchange daily closing cash quotations.
40.-Yearly Average Prices per 100 lb. of Canadian Livestock at Principal Markets, 1962-65

| Item | Toronto |  |  |  | Montreal |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1962 | 1963 | 1964 | 1965 | 1962 | 1963 | 1964 | 1965 |
|  | \$ | \$ | \$ | 8 | \$ | \$ | \$ | \$ |
| Steers, good. | 25.75 | 23.65 | 22.70 | 24.00 | 26.15 | 24.10 | 22.40 | 23.85 |
| Steers, medium | 23.75 | 21.59 | 20.60 | 21.90 | 23.84 | 22.42 | 20.55 | 22.20 |
| Steers, common. | 19.61 | 17.84 | 17.08 | 17.28 | 19.72 | 18.94 | 17.17 | 18.06 |
| Heifers, good. | 23.11 | 22.32 | 20.53 | 21.05 | 20.98 | 20.40 | 20.25 | 20.85 |
| Heifers, medium | 21.31 | 20.26 | 18.61 | 18.96 | 19.23 | 18.79 | 18.50 | 18.57 |
| Cows, good. . | 17.85 | 17.40 | 16.00 | 15.50 | 17.80 | 18.05 | 16.60 | 15.80 |
| Cows, medium | 16.20 | 15.98 | 14.46 | 14.25 | 16.39 | 16.05 | 14.62 | 13.45 |
| Bulls, good... | 19.60 | 19.45 | 18.29 | 16.50 | 19.75 | 20.05 | 18.71 | 15.92 |
| Feeder steers, good | 24.90 | 25.30 | 22.80 | 22.70 | + | 1 |  |  |
| Feeder steers, common | 21.94 | 20.98 | 18.44 | 18.63 | ${ }^{1}$ | ${ }^{1}$ | ${ }^{1}$ | ${ }^{1}$ |
| Calves, veal, good and choice. | 31.85 | 30.70 | 29.85 | 30.50 | 29.50 | 28.05 | 27.75 | 28.80 |
| Calves, veal, common and medium | 24.19 | 23.93 | 22.46 | 19.89 | 23.00 | 22.44 | 20.82 | 21.17 |
| Hogs, Grade B, dressed. | 28.60 | 26.80 | 26.30 | 32.40 | 28.15 | 26.40 | 25.80 | 30.75 |
| Lambs, good. | 22.00 | 23.30 | 24.20 | 26.70 | 20.25 | 21.25 | 23.10 | 29.70 |
| Lambs, common. | 18.21 | 19.11 | 20.29 | 21.64 | 17.24 | 18.45 | 17.05 | 18.41 |
| Sheep, good..... | 9.44 | 9.10 | 8.80 | 8.32 | 8.82 | 9.50 | 8.87 | 11.10 |
|  | Winnipeg |  |  |  | Edmonton |  |  |  |
|  | 1962 | 1963 | 1964 | 1965 | 1962 | 1963 | 1954 | 1965 |
|  | \$ | \$ | \$ | 8 | \$ | 8 | 8 | \$ |
| Steers, good. . . . . . . . . . . . . . . . . . . . . . . . . | 24.85 | 23.00 | 21.85 | 23.25 | 23.70 | 21.85 | 20.70 | 22.15 |
| Steers, medium. | 22.88 | 21.40 | 19.92 | 21.05 | 22.11 | 20.48 | 19.14 | 20.28 |
| Steers, common | 18.58 | 18.81 | 17.52 | 17.75 | 19.36 | 18.32 | 16.76 | 18.68 |
| Heifers, medium | 22.75 20.77 | 21.64 19.49 | 19.74 17.65 | 20.55 18.10 | 21.94 19.80 | 20.21 18.84 | 18.43 16.87 | 19.52 19.03 |
| Cows, good.. | 17.20 | 17.10 | 15.40 | 14.80 | 15.65 | 15.85 | 14.25 | 13.30 |
| Cows, medium | 15.88 | 15.92 | 14.33 | 12.67 | 14.39 | 14.51 | 13.02 | 11.99 |
| Bulls, good. | 18.12 | 17.70 | 16.65 | 16.13 | 17.10 | 16.50 | 15.15 | 14.60 |
| Feeder steers, good... | 24.40 | 23.20 | 20.85 | 22.05 | 23.45 | 22.65 | 20.40 | 21.40 |
| Feeder steers, common....... | 21.62 20.17 | 19.90 19.63 | 17.20 16.52 | 19.19 18.08 | 20.01 18.49 | 19.47 18 | 16.66 16.40 | 17.49 15.74 |
| Feeder cows and heifers, good.. | 20.17 16.25 | 19.63 16.13 | 16.52 13.86 | 18.08 15.29 | 18.49 14.65 | 18.54 14.66 | 16.40 13.41 | 15.74 12.77 |
| Calves, veal, good and choice. | 33.35 | 32.45 | 30.70 | 29.80 | 27.15 | 26.90 | 23.95 | 22.55 |
| Calves, veal, common and medium | 26.69 | 25.36 | ${ }_{2}^{23.06}$ | ${ }^{23.00}$ | 22.27 | ${ }_{2}^{21.30}$ | 18.35 | 16.46 |
| Lambs, good............ | 25.65 17.95 | 24.80 18.95 | ${ }^{23.55}$ | 30.65 | 25.40 | ${ }^{25.40}$ | 22.85 | 31.00 |
| Lambs, common | 15.44 | 18.95 16.65 | ${ }_{17.61}^{19.80}$ | 21.30 18.51 | 17.00 15.48 | 17.80 15.88 | 18.10 16.68 | 20.70 19.08 |
| Sheep, good. | 4.49 | 4.65 | 4.64 | 4.55 | 7.52 | 5.70 | 5.80 | 7.04 |

[^167]
## Subsection 8.-Food Consumption

Food consumption figures represent available supplies, including production and imports, adjusted for change of stocks, exports, marketing losses and industrial uses. All calculations are made at the retail stage of distribution, except for meats for which the figures are worked out at the wholesale stage. The amount of food actually eaten would be somewhat lower than indicated because of losses and waste occurring after the products reach the hands of the consumer. It should also be pointed out that there are minor inaccuracies in certain of the figures since statistics of storage stocks in the hands of retailers and consumers are not available.

All basic foods are classified under 12 main commodity groups. The total for each group is computed using a common denominator for the group, for example: milk solids (dry weight) in the dairy products group; fat content for fats and oils; and fresh equivalent for fruits. All foods are included in their basic form, that is, as flour, fat, sugar, etc., rather than in more highly manufactured forms.

The series in Table 41 represents the official estimates of yearly supplies of food moving into consumption, expressed in pounds per capita, for the years 1959-63 as an average for comparison with the years 1963 and 1964 .

## 41.-Per Caplta Supplies of Food Moving into Consumption 1963 and 1964, with; Average for 1959-63

| Kinds of Food and Weight Base | Poands <br> per Capita per Annum |  |  | Percentagee <br> of 1959-63 Average |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Average } \\ & \text { 1959-63 } \end{aligned}$ | 1963 | 1964 | 1963 | 1964 |
| Cereals. ......................................... Retall wot. | 153.6 | 157.3 | 145.8 | 102.4 | 94.5 |
| Flour (including rye fiour) | 135.9 | 139.1 | 127.1 | 102.4 | 93.5 |
| Oatmeal and rolled oats. ...................... | 4.9 | 5.0 | 5.2 | 102.0 | 108.1 |
| Pot and pearl barley.. | 0.2 | 0.1 | 0.1 | 50.0 | 50.0 |
| Corn meal and flour | 1.8 | 2.2 | 2.5 | 122.2 | 138.9 |
| Buckwheat flour. | 0.1 | 0.1 | 0.1 | 100.0 | 100.0 |
| Rice 1 ........................................ ${ }^{\text {a }}$ " | 3.9 6.8 | 4.0 6.8 | 3.9 6.9 | 100.0 | 101.5 |
| Breakast food.................................... |  |  |  |  |  |
| Potatoes.................................... . Fresh equir. | 158.1 | 154.8 | 157.5 | 39.2 | 10.3 |
| White potatces, fresh.......................... Retail wt. | 140.1 | 132.8 | 133.1 | 94.8 | 95.0 |
| Sweet pokatoes, fresh. . . . . . . . . . . . . . . . . . . . . ${ }_{\text {. }}$ | 0.5 | 0.4 | 0.4 | 80.0 | 80.0 |
| Sugars and Syrups ..................... Sugar content | 104.8 | 103.0 | 106.1 | 88.3 | 101.2 |
| Sucar.................................................. | 97.2 | 84.7 | 98.3 | 97.4 | 101.1 |
| Maple sugar . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . Retail wt. | 0.8 | 0.7 | 0.4 | 87.5 | 50.0 |
| Honey.................................. ${ }_{\text {/ }}$ | 1.8 | 1.9 | 1.8 | 105.6 | 100.0 |
|  | 8.9 | 10.1 | 9.8 | 113.5 |  |
| Pulses and Nuts. . . . . . . . . . . . . . . . . . . . . . . . . Retail wt. | 10.0 | 9.5 | 10.4 | 95.0 | 104.0 |
| Dry besms ${ }^{2}$..... | 2.6 | 2.4 | 2.6 | 92.3 | 100.0 |
| Dry peas. | 1.5 | 1.8 | 2.1 | 106.7 | 140.0 |
| Peanata. ........................................... | 3.1 | 2.9 | 3.2 | 93.5 | 103.2 |
| Tree nuts...................................... | 1.2 | 1.1 | 1.1 | 100.7 | ${ }_{93}^{91.7}$ |
| Cocos.... | 1.5 | 1.5 | 1.4 | 100.0 | 93.8 |
| Fruit. ......... . . . . . . . . . . . . . . . . . . . . . . . Fresh equiv. | 245.9 | 241.1 | 233.9 | 38.0 | 97.6 |
| Tomatoes and Citrus Fruit- |  |  |  |  |  |
| Tomatoes, fresh................ . . . . . . . . . . . Retail wt. | 21.8 | 18.0 | 20.1 | 82.6 | 92.2 |
| Tomato products ${ }^{3}$................... Net wt. canned | 21.0 | 23.1 | 19.6 | 110.0 | ${ }_{89.2}$ |
| Citrus fruit. fresh............................. Retail wt. | 26.9 | ${ }_{13}^{20.7}$ | 24.0 11.4 | 885.8 | 73.5 |
| Citrus fruit juice........................ . Net wt. canned | 15.5 | 13.3 | 11.4 | 85.8 |  |
| Other Fruit- ${ }_{\text {Fresh...................................... Retail wt. }}$ | 71.3 | 77.6 | 77.9 | 108.8 | 109.3 |
|  | 11.2 | 10.7 | 10.8 | 95.5 | 96.4 |
|  | 6.2 | 8.1 | 10.4 | 130.6 | 367.7 |
| Frozen....................................... Retail wt. | 2.4 | 2.8 | 3.4 | 118.7 | 141.7 90.4 |
| Unspecified...........................Fresh equiv. | 82.4 | 27.7 | 29.3 | 85.5 | 90.4 |

## 41.-Per Capita Supplies of Food Moving into Consumption 1963 and 1964, with Average for 1959-63-concluded

| Kinds of Food and Weight Base | Pounds <br> per Capita per Annum |  |  | Percentages <br> of 1959-63 Average |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \hline \text { Average } \\ & 1959-63 \end{aligned}$ | 1963 | 1964 | 1963 | 1964 |
| Vegetables................................... Fresh equiv. | 103.7 | 104.1 | 105.4 | 100.4 | 101.6 |
| Fresh-- ${ }^{\text {a }}$, | 17.5 | 17.5 | 17.0 | 100.0 | 97.1 |
|  | 14.3 | 14.4 | 14.4 | 100.7 | 100.7 |
| Legumes...................................... | 1.1 | 1.7 | 1.4 | 154.5 | 127.3 |
| Other......................................... | 36.8 | 37.3 | 33.5 | 101.4 | 91.0 |
| Processed- Canned | 16.2 | 16.1 | 16.5 | 99.4 | 101.9 |
| Frozen. .......................................... Retail wt. | 1.2 | 3.2 | 3.3 | 266.7 | 275.0 |
| Other..................................Fresh equiv. | 13.2 | 9.3 | 14.9 | 70.5 | 112.9 |
| Oils and Fats................................ | 44.5 | 45.4 | 45.4 | 102.0 | 102.0 |
| Margarine..................................... Retail wt. | 9.4 | 9.2 | 8.9 | 97.9 | 94.7 |
| Lard......................................... " | 8.6 | 7.5 | 7.7 | 87.2 | 89.5 |
| Shortening. | 9.4 | 9.9 | 10.3 | 105.3 | 109.6 |
| Salad and cooking oil | 4.4 | 5.0 | 4.8 | 113.6 | 109.1 |
| Butter. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 17.7 | 19.1 | 19.0 | 107.9 | 107.3 |
| Eggs........................................ | 33.9 | 32.2 | 32.2 | 95.0 | 95.0 |
| Meat..................................Carcass wt. | 141.0 | 143.3 | 149.1 | 101.6 | 105.7 |
| Pork......................................... " | 51.9 | 50.7 | 52.0 | 97.7 | 100.2 |
| Beef.......................................... " | 69.6 | 73.7 | 78.5 | 105.9 | 112.8 |
| Veal. | 6.7 | 6.6 | 6.9 | 98.5 | 103.0 |
| Mutton and lamb | 3.4 | 2.9 | 3.4 | 114.7 | 100.0 |
| Offal | 4.5 | 4.0 | 3.8 | 88.9 | 84.4 |
| Canned meat.......................... Net wt. canned | 5.5 | 5.2 | 5.5 | 94.5 | 100.0 |
| Poultry and Fish. . . . . . . . . . . . . . . . . . . Edible wt. | 35.4 | 38.6 | 40.5 | 109.0 | 114.4 |
| Hens and chickens ${ }^{4} . . . . . . . . . . . . . . . . .$. Eviscerated wt. | 22.5 | 23.7 | 25.4 | 105.2 | 112.9 |
| Other poultry . . . . . . . . . . . . . . . . . . . . . ${ }^{\text {a }}$. | 8.0 | 8.8 | 9.1 | 110.0 | 120.0 |
| Fish and shellfish, fresh and frozen. ..........Edible wt. | 8.0 | 9.4 | 9.8 | 117.5 | 122.5 |
| Fish, cured (smoked, salted, pickled)......... ${ }^{\text {. }}$. | 1.6 | 1.7 | 1.8 | 106.2 | 112.5 |
| Fish and shellfish, canned............... Net wt. canned | 3.3 | 3.4 | 3.3 | 103.0 | 100.0 |
| Milk and Cheese............................. Milk solids | 65.8 | 65.0 | 64.3 | 98.8 | 97.7 |
| Cheddar cheeses................................ Retail wt. | 6.2 | 6.6 | 6.9 | 106.5 | 111.3 |
| Other cheese. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 1.4 | 1.6 | 1.6 | 114.3 | 114.3 |
| Cottage cheese................................. " | 1.3 | 1.4 | 1.5 | 107.7 | 115.4 |
| Evaporated whole milk | 17.9 | 17.2 | 16.6 | 96.1 | 92.7 |
| Condensed whole milk | 0.9 | 1.0 | 0.9 | 111.1 | 100.0 |
| Whole milk powder and cream powder ${ }^{\text {d }}$ | 0.3 | 0.4 | 0.2 | 133.3 | 66.7 |
| Skim milk powder................. | 7.5 | 8.1 | 8.0 | 108.0 | 106.7 |
| Milk in ice cream. | 33.8 | 26.4 | 25.4 | 78.1 | 75.1 |
| Powdered buttermilk | 0.5 | 0.5 | 0.5 | 100.0 | 100.0 |
|  | 336.8 | 323.4 | 321.6 | 96.0 | 95.5 |
| Miscellaneous milk products ${ }^{\text {b }}$................... | 2.3 | 3.4 | 3.6 | 147.8 | 156.5 |
| Beverages $\qquad$ Primary distribution wt. |  | 12.2 | 11.3 | 103.4 | 95.8 |
| Coffee. $\qquad$ | 2.4 9.4 | 2.5 9.7 | 2.4 8.9 | 104.2 103.2 | 100.0 94.7 |

${ }^{1}$ Fluctuations in apparent per capita flour consumption are caused partly by lack of complete data on flour inventories in all positions. ${ }^{2}$ Includes soybean flour. ${ }^{3}$ Tomatoes canned, tomato juice. tomato pulp, paste and purée, and ketchup. 4 Exclusive of Newfoundland.
${ }^{5}$ Includes process cheese.

- Cream powder included in whole milk powder for 1963 and 1964 . ${ }^{7}$ Includes cream expressed as milk.
${ }^{8}$ Includes evaporated and condensed skim milk, condensed buttermilk, sugar of milk, formula skim milk products and concentrated liquid skim milk.

Disappearance of Meats and Lard.-Production of meats from slaughter in Canada, total supply, distribution and per capita disappearance of meats and lard are shown in Table 42. All estimates are on a carcass-weight basis except canned meats, which are in terms of product.
42.-Supply, Distribution and Disappearance of Meats and Lard, 1960-65

| Item | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Beer- |  |  |  |  |  |  |
| Animsls slaughtered is Canads........ , ${ }^{\prime} 000$ | 2,471.8 | 2,510.9 | 2,503.6 | 2,653.6 | 2,985.1 | 3,173.4 |
| Estimated dressed weight............. '000 Ib. | 1,266,280 | 1,302,641 | 1,297, 203 | 1, 408,778 | 1,551,246 | 1,847,897 |
| On hand, Jan. 1....................... "\% | 27,958 | 29,208 | - 33, 350 | [ 33,719 | 41,085 | - 45,045 |
| Imports for consumption................ |  | 30,990 | 27,555 | 37,617 | 27,348 | 18,519 |
| Total Supply | 1,325,292 | 1,362,839 | 1,368,108 | 1,480, 144 | 1,619,879. | 1,711,456 |
| Expor | 25,942 | 37,536 | 27,656 | 25,564 | 42,770 | 102,293 |
| Used for canning. ..................... | 20,103 | 20, 857 | 19,086 | 18,251 | 19,81? | 19,789 |
| On hand, Dec. $31 . . . . . . . . . . . . . . . . . . .$. | 29,208 | 33,350 | 33,719 | 41,085 | 45,045 | 46, 190 |
| Domestic Disapptarancr. ............ '000 lb. Per Capita Disappearance. $\qquad$ lb. | 1,250,039 | $1,271,296$ 69.7 | $\begin{array}{r} \hline 1,287,647 \\ 69.2 \end{array}$ | $\begin{array}{r} 1,395,214 \\ 73.7 \end{array}$ | $\begin{array}{r} 1,512,051 \\ 78.5 \end{array}$ | $1,543,184$ |
| Veal- |  |  |  |  |  |  |
| Animals slaughtered in Canada.......' '000 | 1,081.7 | 1,048.8 | 090.1 | 1,049.6 | 1,091.5 | 1.248.3 |
| Estimated dressed weight............. '000 ${ }^{\text {/b }}$. | 125, 155 | 123, 754 | 12!,488, | 127, 436 | 134,800 | 156,443 |
| On hand, Jan. 1...................... " | 3.925 | 4,970 | ${ }_{1}^{1,652}$ | $3^{3,867}$ | 5,094 | 5,918 |
| Total Supply | 129,080 | 128,724 | 125, 140 | 131,303 | 139,894 | 162,361 |
| Eiports |  | 1 | ${ }^{1} 10$ |  |  | 1 |
| Used for canning | 959 | 1,321 | 1.198 | 1,419 | 1.424 | 1,348 |
| On band, Dec. 31 | 4,870, | 3,652 | 3,867 | 5,094 | 5,918 | 4,376 |
| Domestic Dibappearance........... '000 1b. Per Capita Disappearance. $\qquad$ 1b. | 123,151 6 | 123,751 6.8 | 120,075 6.5 | 124,790 6.6 | $\begin{array}{r} 132,552 \\ 6.9 \end{array}$ | 156,737 8.0 |
| Mutton and Lamb- |  |  |  |  |  |  |
| Animals slaughtered in Canada........ 000 | 737.4 | 816.0 | 764.6 | 697,4 | 660.6 | 568.2 |
| Estimated dressed weight. . . . . . . . . . . . 0000 lb . | 31,561 | 35,086 | 32,671 | 30,481 | 29,124 | 24,583 |
| On hand, Jan. 1. | 6,080 | 7,816 | 9,932 | 7,054 | 9,298 | 9,147 |
| Imports for consumption | 23,532 | 33,433 | 37,587 | 47,856 | 37,356 | 30,299 |
| Total Suppl | 61,178 | 76,335 | 80,190 | 85.391 | 75,778 | 64,029 |
| Exports. | 109 | 173 | 556 | 679 | 757 | 370 |
| Used for canning | 8810 | 1,185 | 1,232 | 1,108 | 1,227 | 1,454 |
| On hand, Dec. 3 | 7,816 | 9,932 | 7,054 | 9,298 | 9,147 | 6,625 |
| Domestic Disappearance. ............ 000 lb . Per Capita Disappearance........... lb. | 32,438 2.9 | 65,045 3.6 | 71,348 3.8 | 74, 306 | 64,647 3.4 | 55,589 2.8 |
| Pork- |  |  |  |  |  |  |
| Animals slagghtered in Canada ........ 000 | 7,804.4 | 7,522.1 | 7,648.2 | 7,60t.0 | - $8,301.0$ | -8,111.7 |
| Eatimated dressed weight............. 0001 lb . | 988,035 <br> 50.349 | 966,595 21.139 | $\begin{array}{r}978,185 \\ 24,648 \\ \hline\end{array}$ | 978,295 18.357 | $1,060,651$ 25,236 | 1,027,286 |
| On hand, Jen. 1........................ * | 56, $\mathbf{1 7}, 706$ | 21,139 41,859 | 24,648 | 18,347 <br> 89,465 | 25,236 <br> 53,758 | 37, 322 |
| Total Supply | 1,062,290 | 1,029,593 | 2,038,485 | 1,088,117 | 1,129,845 | 1.093,778 |
| Exports | 67.691 | 52,394 | 47, 922 | 47,420 | 53,959 |  |
| Used for canning | 33,602 | 42, 255 | 46,764 | 54, 863 | 56.937 | 48, 48.555 |
| On hand, Dec. 31 | 21,139 | 24,648 | 18, 357 | 25,236 | 27,286 | 22,550 |
| Domebtic Dibapprarance. . . . . . . . . . . 000 lb . | $\begin{array}{r} 9398858 \\ 92.6 \end{array}$ | 910,296 | $925,392$ | $\begin{array}{r} 958.798 \\ 50.7 \end{array}$ | $\begin{array}{r} 1,001,463 \\ 52.0 \end{array}$ | $\begin{array}{r} 969,657 \\ 49.2 \end{array}$ |
| Canred Meats- |  |  |  |  |  |  |
| Estimated production................. '00013. ${ }^{\text {a }}$ | 66,681 | 84, 928 | 88.893 | 92, 263 | 98,653 | 94,1088 15880 |
| On hand, Jon. 1......... | 127,274, | 48,473 | 42,775 12.405 | 29,478 18,407 | 17,580 18,780 | 15,192 |
| Imports ior consumption. .............. | 12,487. | 18,105 | 12.405 | 10,407 | 18,78 |  |
| Total Supp | 205,442 | 151,508 | 144,073 | 138, 148 | 129,993 | 125,054 |
|  |  | 9,623 | 16,487 | 21,991 | 8,324 | 6,107 |
| On hand, Dee. 31 | 48,473 | 42,775 | 29,478 | 17,560 | 15,880 | 12,435 |
| Domestic Disappearance, . . . . . . . . . '000 lb. Per Capita Disappearance. lb. | 33.612 <br> 7.5 | 99, 108 | $\begin{array}{r} 98,108 \\ \hline 5.3 \end{array}$ | $\begin{array}{r} 98,597 \\ 5.2 \end{array}$ | $\begin{array}{r} 105,789 \\ 5.5 \end{array}$ | 106,512. |

For footnotes, see end of table.
42.-Supply, Distribution and Disappearance of Meats and Lard, 1960-65-concluded

| Item | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Offal- |  |  |  |  |  |  |
|  | 95,849 | 95,389 | 95,501 | 88,454 | 107.873 | 112,791 |
| On hand, Jan. l................................ | 5,254 5,063 | 5,042 3,426 | 5,906 3,997 | 5,001 4,743 | 6,267 2.850 | 6,835 2,048 |
| Total Supply | 106,163 | 103,857 | 105,404 | 108, 198 | 116,940 | 121,674 |
| Exports. | 14,434 | 14,1+6 | 20,4t0 | 23.911 | 34,013 | 45.201 |
| Used for eanning | 1,673 | 2,058 | 1,818 | 2,057 | 2,034. | 1, 815 |
| On hand, Dec. 31 | 5,042 | 5,908 | 5,001 | 6,217 | 6,835 | 7,428 |
| Domestic Disappearanee. ........... '000 lb. Per Captta Disappearance. $\qquad$ lb. | 85,014 4.8 | 81,746 4.5 | 78,175 4.2 | 76,013 4.0 | 74,058 3.8 | 67,230 3.4 |
| Lard- |  |  |  |  |  |  |
| Eatimated production.................. 000 lb . | 142,193 | 130,191 | 123,513 | 125, 407 | 133, 103 | 121,777 |
| On hand, Jan. 1. | 7,683 | 5,949 | 6,82] | 6,263 | 5,844 | 6,976 |
| Importe for consulmption | 20,903 | 25,145 | 24,784 | 17,073 | 16,001 | 17,073 |
| Total Supply | 170,759 | 161,285 | 155.218 | 148.743 | 154,948 | 145,826 |
| Exports. <br> On hand, Dee. 31. | $\begin{aligned} & \hline 1,667 \\ & 5,949 \end{aligned}$ | $\begin{array}{r} 812 \\ 6,921 \end{array}$ | $\begin{array}{r} 82 \\ 6,263 \end{array}$ | 5,844 | $\begin{array}{r} 34 \\ 6,976 \end{array}$ | 31 5,073 |
| Domestic Digappeabance. ........... . 000 lb . Pbr Captia Disappearance........... lb. | 163,143 9.1 | 152,452 8.4 | 148,923 8.0 | 142,876 | 147,938 ${ }^{7.7}$ | $140,722$ |

I Qusntity small; included with beef.
2 Trimmed of larding fat and excluding offal.
${ }^{3}$ Includes commercial lard production and estimated lard equivalent of renderable pork fat available from all uninspected nlaugbter.

## Section 4.-Agricultural Statistics of the Census

Data from the Census of Agriculture taken June 1, 1966 were not available at the time of preparation of this volume. Preliminary reports are scheduled for release in April-June of 1967 and final reports in October and November of that year. A list of these reports and their prices is available from the DBS on request.

Meanwhile, 1956 and 1961 Census of Agriculture data showing number of farms and use of farm land by province is given in Tables 43 and 44. Additional brief data on size of farms, persons employed in agriculture, farm machinery, farm electrification and farm capital are included in the 1966 Year Book at pp. 511-514 and on the economic classification of farms and tenure and age of farm operators in the 1963-64 edition at pp. 478-482. Details are contained in Vol. V of the 1961 Census of Canada and in a number of special census reports, all procurable from the DBS or the Queen's Printer, Ottawa.

Number of Farms.-There were 16 p.c. fewer farms in Canada in 1961 than in 1956, the year of the immediately preceding census. The number dropped from 575,015 in the earlier year to 480,903 in the later. However, part of this decrease was attributable to a change in the census definition of a farm. In the 1956 (and 1951) Census, a farm was defined as a holding on which agricultural operations were carried out and which was (a) three acres or more in size, or (b) from one to three acres in size and with agricultural production during the previous year valued at $\$ 250$ or more. In the 1961 Census, a farm was defined as a holding of one acre or more with the sales of agricultural products during the previous year valued at $\$ 50$ or more. On the basis of the 1956 definition, the decrease in the number of farms was from 575,015 to 521,634 in 1961 , or about 9 p.c.
43.-Number of Farms, by Province, Censuses of 1356 and 1961

| Province or Territory | $\begin{gathered} 1956 \\ (1956 \\ \text { Definition })^{4} \end{gathered}$ | $\begin{gathered} 1961 \\ (1961 \\ \text { Definition) } \end{gathered}$ | $\begin{aligned} & \text { P.C. Change } \\ & 1956-61 \end{aligned}$ | $\begin{gathered} 1961 \\ (1056 \\ \text { Definition) } 1 \end{gathered}$ | $\underset{1956-61}{\text { P.C. Change }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. |  |
| Newfoundland........................ | 2,387 | 1,752 | -26.6 | 3,858 | +40.7 |
| Prince Edward Ialand. | 9,432 | 7,335 | -22.2 | 8,025 | -14.9 |
| Nova Scotia. | 21,075 | 12,518 | -40.6 | 18,264 | -13.3 |
| New Brunswick. | 22,116 | 11,786 | -48.7 | 18,331 | -17.1 |
| Quebee. | 122.617 | 95,777 | -21.9 | 108,865 | -11.2 |
| Ontario. | 140,602 | 121,333 | -13.7 | 127,492 | -9.3 |
| Manitobs. | 49,201 | 43,306 | -12.0 | 44,264 | -10.0 |
| Saskatchewan. | 103.391 | 93,924 | - 9.2 | 94,402 | $-8.7$ |
| Alberts. | 79,424 | 73,212 | $-7.8$ | 74,661 | - 8.0 |
| British Columbia...................... | 24,748 | 18,934 | -19.5 | 23,846 | - 3.2 |
| Yukon and Northwest Territories. | 22 | 26 | $+18.2$ | 26 | +18.2 |
| Camada....................... . | 5\%5,015 | 484, 203 | -16.4 | 521,634 | - 9.3 |

I See tert immediately preceding table.

Farm Areas.-The total area of farms as defined in the 1961 Census was 172,551,051 acres, only slightly less than the $173,923,691$ acres recorded in 1956 . Improved farm land for the country as a whole was up 3 p.c. from $100,326,243$ acres to $103,403,426$ acres and unimproved farm land, which includes woodland and rough pasture, was down about 6 p.e. from $73,597,448$ acres to $69,147,625$ acres. Decreases in total farm area in the six eastera provinces and in British Columbia offset by almost $1,400,000$ acres the increases in total farm area in the Prairie Provinces and the Territories. As Table 44 shows, only Manitoba, Alberta and British Columbia reported more farm land under crops in 1961 than in 1958 but the total increase in these provinces was somewhat less than the total decrease in the other provinces. On the other hand, the total increase in improved pasture in the four western provinces was somewhat greater than the total decrease in the eastern provinces and there was a substantial increase in the screage under summer fallow for Canada as a whole.

44,-Use of Farm Land, by Province, Censuses of 1956 and 1581

| Item | Newfoundland |  | Prince Edward Island |  | Nova Scotis |  | New Brunswick |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1956 | 1961 | 1958 | 1961 | 1956 | 1961 | 1956 | 1961 |
|  | acres | acres | acres | acres | acres | acres | acres | acrea |
| Improved Latud. | 21,334 | 20,455 | 645,432 | 579,558 | 673,874 | 497,521 | 351,291 | 744,107 |
| Under cropet . . . . . | 15,968 | 12.919 | 419,099 | 391,112 | 416.235 | 329,114 | 617,279 | 482,548 |
| Pasture (improved) | 5,739 | 4,097 | 201,225 | 167,913 | 161.424 | 127,488 | 252,886 | 200,047 |
| Suramer fallow. Other........ | 2,435 | 3,294 | 2,463 22,705 | 2,532 18,001 | 2,649 49,566 | - ${ }^{2,65} \times 285$ | 67,768 | 5, 45,864 |
| Unimproved Land | 47,580 | 34,106 | 415.971 | 350,599 | 2,145,768 | 1,732, 874 | 2,034,158 | 1,165,568 |
| Woodland | 26,919 | 19, 802 | 334,228 | 298,759 | 1,566,071 | 1,362,869 | 1,703,702 | 1,230,861 |
| Other | 20,061 | 14,304 | 85,745 | 83.840 | 579, 697 | 370,005 | 326,456 | 234,707 |
| Totals, Farm Area. | 71,814 | 34,561 | 1,065,463 | 960,157 | 2,775,642 | 2,234,395 | 2,981,449 | 2,199,675 |

[^168]44.-Use of Farm Land, by Province, Censuses of 1956 and 1561-concluded

| Item | Quebec |  | Ontario |  | Manitoba |  | Saskatchewan |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1956 | 1961 | 1956 | 1961 | 1956 | 1961 | 1956 | 1951 |
|  | acres | scres | acres | acres | acres | acres | acres | gcres |
| Improved Land. | 8,672, 835 | 7,864,176. | 12,572,157 | 12,032,924 | $11,453,788$ $7.686,013$ | $\underset{7,688,728}{11,963,94}$ | 40,506,060 | 43,117,813 |
| Under cropsi........) | 2, 5442,764 | 2,312,950 | 8,470,688 | 3,295,609 | -594,902 | 719.819 | 1, 128,001 | 1,394, 280 |
| Summerfsllaw. | 67,082 | 46,344 | 333,973 | 244, 842 | 2,827,551 | 3,230,095 | 14,193,468 | 17,179,572 |
| Otber. | 370,465 | 291,580 | 548,089 | 502,115 | 345,317 | 325,352 | 704,030 | 620,769 |
| Unimproved Land | 7,284,283 | ¢,334, $\mathbf{1 6}$ | 7,307, 489 | 6,545,583 | 6,478, 034 | ¢, 305,957 | 22,287,979 | 21,297,705 |
| Woodland. | 4,877,803 | 1,501,305 | 3,338,870 | 3,257,589 | t,566,494 | 1.490,673 | 2, 779,043 | 2.194,920 |
| Other. | 2,402,490 | 1,839,011 | $3,968,619$ | 3,287,994 | 4,911, 540 | 4,715,284 | 19,908,936 | 19,102,785 |
| Totals, Farm Area. | 15,910,128 | 14,198,492 | 13,879,646 | 18,578,507 | 17,931,817 | 18,163,951 | 62,793,979 | 64,415,518 |
|  | Alberta |  | British Columbia |  | $\begin{gathered} \text { Y.T. } \\ \text { N.W.T. } \end{gathered}$ |  | Canada |  |
|  | 1956 | 1961 | 1956 | 1961 | 1956 | 1981 | 1956 | 1961 |
|  | acres | acres | acres | acres | acres | acres | acres | acres |
| Improred Land | 23,746,113 | 25,388, 587 | 1,166,752 | 1,303,243 | 712 | 1,088 | 100,326,243 | 103,403,426 |
| Under cropsi. | 14,850,171 | 15,814,889 | 689,749 | 788, 896 | 230 | 52 f | $62,944,176$ | 62,435,5? 4 |
| Pasture (improved) | 1, 279, 884 | 1,670.391 | 320.251 | 354,830 | 245 | 492 | 10,057,819 | 10.247, 896 |
| Other | , 291.784 | 7 , $4 \times 3,888$ | 89,273 | 81,780 | $\stackrel{4}{4}$ | 11 | 24.6194 | 28,243, 386 |
|  |  |  |  |  |  |  |  |  |
| Unimprored Iand ..... | 22,224,282 | 21,940,126 | 3,372,129 | 3,293,289 | 3,765 | 7,502 | 73,597,448 | 65,147, 625 |
| Woodland | 2,881,128 | 2, 138,137 | 855, 398 | 752,990 | 887 | 1.484 | 19,540,541 | 17.247.389 |
| Other. | 19,333, 154 | 19,801,989 | 2,516,731 | 2,450,299 | 2,878 | 6,018 | 54,056,907 | 51,900,236 |
| Totals, Farm Area.. | 45,970,395 | 47,228,653 | 4,538, 881 | 4,506,552 | 4,472 | 8,590 | 173,523,691 | 172,551,031 |

I Includes field, vegetable, fruit and nursery crop land.

## Section 5.-International Grop Statistics

Tables 45 and 46 are based on estimates published in March and April 1966 by the Foreign Agricultural Service, United States Department of Agriculture, and give the acreages and production of wheat and the production of oats and barley for the harvests of 1964 and 1965 with average for the years 1955-59, in the leading countries of the world.

## 45.-Estimated Acreages and Production of Wheat Harvested in 1964 and 1965 in Specified Countries, with Average for 1955-59

| Continent and Country | Acreages of Wheat |  |  | Production of Wheat |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Average } \\ & 1985-59 \end{aligned}$ | 1964 | 1965 | $\begin{aligned} & \text { A verage } \\ & 1955-59 \end{aligned}$ | 1964 | 1965 |
|  | '000 | '000 | '000 | '000 bu. | '000 bu. | '000 bu. |
| North America ${ }^{\text {a }}$. | 74,180 | 80,910 | 79,689 | 1,606,000 | 1,958,000 | 2,083.080 |
| Mexico.......... | 22,730 2,210 | 29,686 2.016 | 28,282 1,969 | 465,618 44,618 | 600,424 66,138 | 677,917 77 |
| United States | 43,128 | 49, 421 | 49,313 | 1,095,357 | 1,290,650 | 1,326,747 |

For footnote, see end of table, p. 500.
45.-Estimated Acreages and Production of Wheat Harvested In 1964 and 1965 in Specifled Countries, with Average for 1955-59-concluded

| Continent and Country | Acreages of Wheat |  |  | Production of Wheat |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Average } \\ 1955-59 \end{gathered}$ | 1964 | 1965 | $\begin{aligned} & \text { Average } \\ & 1955-59 \end{aligned}$ | 1964 | 1965 |
|  | '000 | '000 | ,000 | '000 bu. | '000 bu. | '000 bu. |
| Europe ${ }^{\text {. }}$ | 71,880 | 71,840 | 71,400 | 1,866,000 | 2,245,0*4 | 2,400,400 |
| Europe West | 46,580 | 46,040 | 46,600 | 1,313,000 | 1,585,009 | 1,635,000 |
| Austris. | ${ }_{501}^{634}$ | ${ }_{599} 89$ | 707 | 20, 800 | 27,577 | 25,202 |
| Belgium. | ${ }^{501}$ | ${ }_{2}^{533}$ | 562 | 26,669 | 33,065 | 31,500 |
| Britain. | 2.098 | 2,208 | 2,536 | 101,718 | 139.364 | 153,227 |
| Denmar | 179 | 217 | 311 | 10,516 | 19,878 | 20,460 |
| Finland. | ${ }^{314}$ | ${ }_{6}^{663}$ | 660 | 7,510 | 17.005 | 18,397 |
| France... | 10,432 | 10,843 | 11, 120 | 357,997 | 508, 446 | 527,245 |
| Germany | 3.059 2.704 | 3,574 | 3,489 | 139,071 | 191.161 | 159,749 |
| Greece. | 2,704 | 2,984 | 2,776 | 57,760 | 79,720 | 73, 437 |
| Ireland | 12. ${ }_{1}^{361}$ | 10.814 | ${ }^{18} 182$ | 15,280 | 8,997 | 7,470 |
| Netheriands | 12,250 | 10,892 | 1,602 | 14,311 | 315, 2642 | 359,225 |
| Norway. | 35 | 18 | 10 | 1.130 | ${ }^{26.140}$ | 25,392 |
| Portugal | 2.009 | 1,693 | 1,730 | 24,210 | 17,328 | 24,691 |
| Spain. | 10.728 | 10,059 | 10,506 | 165, 400 | 145,720 | 100, 0009 |
| Sweden. | 831 | ${ }_{261}^{667}$ | 711 | 28, 030 | 39,095 | 34, 250 |
| Switzerlan | 245 | 251 | 250 | 10,860 | 13,705 | 12,570 |
| Europe Eabtt. | 25,310 | 25,800 | 24,800 | 553,000 | 660,000 | 765,000 |
| Bulgaria. | 3,466 | 3,138 | 3,090 | 79,000 | 74,590 | 108,400 |
| Czechollovakia | 1,818 | 2,053 | 2,026 | 54, 500 | 67.200 | 66,140 |
| Germany, East. | 1,026 | 1,070 | 1,063 | 42,160 | 49,530 | 47,770 |
| Hurgary | 3,112 | 2,747 | 2,674 | 68,500 | 75,665 | 86,200 |
| Poland | 3,581 | 4,051 | 4,150 | 83,900 | 112,875 | 123,500 |
| Romanis | 7,302 | 7.310 | 7,400 | 118, 600 | 146,500 | 202,000 |
| Yugoalsvis | 4,750 | 5,189 | 4,151 | 102,000 | 125,950 | 127,130 |
| U.S.S.R. (Europe and Asia | 159,000 | 167,800 | 161,000 | 1,910,000 | 2,100,000 | 1,700,000 |
| Asial. | 144,490 | 147,200 | 145,204 | 1,871,000 | 1,924,000 | 1,590,400 |
| China, Majnland | 65,500 |  | 880,000 |  |  |  |
| Cyprus | 196 | 165 | 162 | 2,741 | 1,680 | 2,940 |
| India. | 30,393 | 33,349 | 33,245 | 331.870 | 362,309 | 443.800 |
| Iran. |  |  |  | 95,950 | 95,500 | 105,600 |
| Iraq. | 2,540 |  |  | 27,120 | 23,500 | 29, 500 |
| Israel | 137 | 138 | 168 | 2,420 | 4.650 | 5.440 |
| Japan. | 1,551 | 1,256 | 1,176 | 50,485 | 45,709 | 47,289 |
| Jordan. | 638 | 783 | 696 | 5,460 | 10,828 | 10,500 |
| Kores, South | 317 | 361 |  | 4,470 | 6,140 |  |
| Lebanon | 162 | 146 | 148 | 1,680 | 1,479 | 2,000 |
| Pakistan | 11,741 | 12,544 | 13,272 | 130,703 | 154,185 | 189.940 |
| Syris.. | 2,540 | 3,650 | 3,580 | 25,940 | 40,400 | 38,200 275,000 |
| Turkey | 16,990 | 17,600 | 18,000 | 227,890 | 257,000 | 275,000 |
| Afrlcal. | 17,124 | 17,900 | 18,200 | 196,060 | 214,000 | 223,000 |
| Algeris. | 4,658 |  |  | 48,364 | 41, 200 | 49,600 |
| Egypt. | 1,559 | 1,344 | 1,450 | 53,802 | 55,100 | 48, 350 |
| Moroceo................ |  | 3,776 3,150 |  | 35,720 <br> 27 <br> 1740 | 43,940 39,290 | 25,980 |
| South Africa, Republic of Tuniais | 2,500 2,908 | 3,150 2,743 | 2,735 | 27,640 17,800 | 39,800 | 19,100 |
| South Americal. | 18,760 | 15,800 | 15,960 | 324,009 | 508,009 | 321,000 |
| Argentina.. | 11.598 | 14,500 |  | 225,949 | 415,000 | 240,000 |
| Brazil. | 2,386 |  |  | 24,450 | 10,000 | 8,500 |
| Chile. | 2,448 | 2,098 | 2,100 | 40,585 | 45,782 | 42,255 |
| Colombia | 423 | 262 | 314 | ${ }_{5}^{5,012}$ | 3,123 | 5.044 |
| Peru. | ${ }^{365}$ | +369 | 370 | 5,170 $\mathbf{8 , 9 5 0}$ | 5,260 23,720 | 15,430 |
| Uruguty... | 1,604 | 1,302 | 940 | 18,950 | 23,720 | 15,40 |
| Oceanla | 9,995 | 18,160 | 17,409 | 173,040 | 378,004 | 270,000 |
| Australia | 9,892 | 17,919 | 17,160 | 168,217 | 368,800 | 260,000 8,500 |
| New Zealand. | 103 | 184 | 200 | 4,810 | 9,016 | \$,500 |
| Forld Totats . | 495,400 | 543,600 | 509,000 | 7,946,000 | 9,327,004 | 8,987,000 |

[^169]| 46．－Estimated Production of Oats and Barley Harvested in 1964 and 1965 in Specified Countries，with Average for 1955－59 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Continent and Country | Oats |  |  | Barley |  |  |
|  | $\begin{gathered} \text { Average } \\ \text { 1955-59 } \end{gathered}$ | 1964 | 1965 | $\begin{gathered} \text { Average } \\ 1955-59 \end{gathered}$ | 1964 | 1965 |
|  | ＇000 bu | ＇000 b | 000 | ＇000 bu． | 000 b | 000 bu ． |
| North America Canada． Merico United States | $1,660,000$ 37,764 5,308 $1,278,145$ | $1,243,000$ 25178 5,790 880,095 8， | $1,380,000$ 419,957 5,570 959,192 | $\begin{array}{r}671,000 \\ 237898 \\ 8,50 \\ 424,448 \\ \hline\end{array}$ |  | 634,000 214,555 7，920 411,897 |
| Europel． | 1，315，000 | 1，100，000 | 1，095，000 | 1，050，000 | 1，617，000 | 1，690，000 |
| Europe West | 935，000 | 805，000 | 780，000 | 800，000 | 1，317，000 | 1，365，000 |
| Anstria． | 23，740 | ${ }^{22,520}$ | 19，300 | 17，110 | 27， 860 | ${ }^{24,710}$ |
| Belpium． Britain． | 31,470 163,310 | －${ }_{92,750}^{25,710}$ | 21,260 84,980 | 14,520 148,200 | － $\begin{array}{r}23,680 \\ 345,520\end{array}$ | －${ }^{2376,948}$ |
| Denmark | 51，210 | 56，560 | 53，670 | 110，090 | 179， 130 | 189，460 |
| Finland． | 48，160 | ${ }^{51}$ ， 120 | 70， 280 | 15，010 | ${ }^{16,980}$ | ${ }^{23,040}$ |
| France．．． | －${ }^{224,270}$ | 159,150 159 15000 | 167，${ }^{1690}$ | 197，890 | － 179,830 | － 154,690 |
| Greece．． | 11，000 | ${ }^{10,680}$ | 12，200 | 10，950 | 12，780 | 18，910 |
| Ireland | 34，380 | 19，950 | 20，580 | 16,110 <br> 13,240 <br> 1 | 22,770 11,550 | 24,220 13 13 |
| Laxemb | 37,490 2890 | 32，080 | 36,330 <br> 2,270 |  |  |  |
| Netherlan | 32，140 | 28，920 | 25，000 | 12，970 | 17，260 | 17，120 |
| Norway | 9，320 | 8，650 | 7，810 | 13，480 | 22，000 | ${ }^{22,270}$ |
| ${ }_{\text {Portuy }}$ | 7,450 27，000 | 4,660 26,250 | 5， 25，730 | 3,850 82,470 | 73，950 | 2,800 66,970 |
| Spain．．． | 58，750 | ${ }_{99}^{29,760}$ | 82，510 | 26，760 | 63，700 | 67，850 |
| Switzerland | 3，850 | 2，600 | 2，140 | 3，430 | 4，820 | 4，270 |
| Europe East | 380，000 | 295，000 | 315，000 | 250，000 | 300,000 | 325，000 |
| Bulgaria．．．． | 12， $12 \times 2$ | ${ }^{10,610}$ | $\begin{array}{r}7,600 \\ 45 \\ 45 \\ \hline 100\end{array}$ | 21,080 61,775 | 28,480 65,630 | 42,070 63,200 |
| Germany，East | 72，338 | 53，400 | 51，950 | 37，760 | 68,710 | 63，380 |
| Hungary | 14，605 | 3，790 | 3，450 | ${ }^{38,860}$ | 37，570 | 46，000 |
| ${ }_{\text {Poland }}$ | 168，${ }^{1650}$ | 154，000 | 174，000 | － 53,630 | S8， $\substack{1580 \\ 180}$ | 62，700 |
| Yugoolavie | 224，090 |  | 23，220 | 21，890 | 24，530 | 31， 300 |
| U．S．S．R．（Europe and Asia） | 845，000 | 270，000 | 320，000 | 440，000 | 1，090，000 | 870，000 |
| Astal ${ }_{\text {china }}$ | 105，000 | 100，000 | 100，000 | 845,000 | 77\％，000 | 790，000 |
| China | 65，000 | － |  |  | 2，600 | 5，970 |
| India． | － |  |  | 124，600 | 93，580 | 107， 660 |
|  | － | － |  | 442，${ }^{4}$ | 41,000 32000 | 46，000 |
| Israel． |  |  |  | $\begin{array}{r}\text { 24，950 } \\ \hline 2\end{array}$ | 5，340 | 3 3，220 |
| Japan．．．．．i．． | 12，188 | 8，360 | 9，140 |  | 51,7700 420 | 51，950 |
| Pakkestan．．．．．．． |  |  |  | 36,260 6,620 | 5，690 | 65,970 5,970 |
| Tyurkey． | ${ }_{4}^{456}$ | ${ }_{29}^{140}$ | 140 31,000 | 16,060 139,000 | 29,260 128,600 | 31,700 142380 |
| Africal |  |  |  |  |  | 120,009 |
|  | 4， | 15，000 | 12，00 | 125，000 | 16，500 | 120，000 |
| Morocco Bouth Arica，Republic | 1，570 | 1，330 | 1，220 | 55，250 | 55，070 | 55，000 |
| Touth Africa，Republic | 6，040 | 9，560 | 6，870 | 1，150 | 1，790 | 1，530 |
| United Arab Republic．．． | 660 | 二 | 二 | 8,440 6,090 | 5，970 6,500 | 8,270 5,970 |
| South Americal |  |  | 50，000 |  |  |  |
| Argentina． | 64，620 | 55，430 | 31，700 | 50，510 | 37，200 | 19，570 |
| Chile． | 7，970 | 8，240 | 8，960 | ${ }_{4}^{4,930}$ | 6，220 | 6，000 |
| Ecuador． | 二 | 二 | 二 | ${ }_{3}^{3,290}$ | 5，050 | 4，410 |
| Pera．． |  |  |  | 3,930 8,550 | 3,120 <br> 8,400 | ${ }_{8}^{3,220}$ |
| Uruguay．．．．．． | 2，789 | 5，900 | 6，130 | 1，460 | 1，840 | 1，150 |
| Oceanla． |  |  |  |  |  |  |
| Australia．．．．． New Zealand |  | $\begin{gathered} \mathbf{8} 87,5050 \\ 2,290 \end{gathered}$ |  | － 45.400 | 51，370 | 39，900 |
|  |  |  |  |  |  |  |
|  | 4，085，000 | 2，890，000 | 3，022，100 | 3，255，000 | 4，295，000 | 4，200，000 |

## CHAPTER XII.-FORESTRY*

| CONSPECTUS |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Page |  |  | Page |
| Section I. Foreter Regources, | 508 | Section 4. Forest Adminibtration, Rebearch and Congeryation.. |  |  |
| Section 2. Forest Depletion | 514 |  |  | 522 |
| Section 3. Statistice of Forest and Allied |  | Subsection 1 | 1. Federal Forestry Program... | 522 |
| Subsectioa 1. Woods Operations. | 516 | Subsection 2 | 2. Provincial Forestry Programs | 526 |
| Subsection 2. Wood Industries. | 517 | Subsection 3 | 3. The Pulp and Paper Research |  |
| Subsection 3. Paper and Allied Industries. | 519 | Institute | of Canada.. | 534 |

> The interpretation of the symbols used in the tables throughott the Year Book will be found on p. viit of this volume.

Canada's extensive forests have been an invaluable asset to the country and its people since the earliest days of settlement. The productive portion of these forests has poured increasing wealth into the stream of national income, contributing to the economy of the country as the producer of raw materials for industry and as the source of livelihood for hundreds of thousands of persons. Perhaps in no other country is the national wealth so dependent upon its forest resources and the success of its forest industries as in Canada. The annual forest harvest of some $3,424,000,000 \mathrm{cu}$. ft. supports a highly complex and diversified export and domestic industry directly employing more than 300,000 persons and paying out $\$ 1,200,000,000$ annually in salaries and wages. The forests support 8,000 sawmills and 4,000 wood-using plants, many of them small units contributing appreciably to the income of local economies. The pulp and paper industry alone stands first among Canadian manufactures in terms of employment, wages paid, new investment and net value of output, and the sale of forest products abroad represents about 27 p.c. of the value of Canada's export trade.

The predominant part played by the pulp and paper, lumber and other forest products industries in the development of the country and in its current economy has resulted in a widespread tendency to evaluate the forest in terms of timber alone. But equally important is the fact that the existence of widespread forest cover, productive or unproductive in the sense of human utilization, remains essential to the maintenance of the balance of nature--in protecting water-catchment areas and assuring supplies of water, in lowering the temperature, reducing the velocity of the wind and protecting the land against drought and erosion, and in providing shelter for birds and animals. It is reassuring that a growing realization of the economic importance of the forest for its non-commercial values, including recreation and wildlife and watershed protection, is bringing about increasing recognition of the true value of the forest and is thus developing a broader concept of foreatry.

## Section 1.-Forest Resources

Forest Regions. 7 -The forests of Canada cover a vast area in the north temperate climatic zone but wide variations in physiographic soil and climatic conditions cause marked

[^170]differences in their character in different parts of the country; bence, eight fairly welldefined forest regions may be recognized. These regions, with the relative proportion of the total area of all forest regions occupied by each, are as follows:-


Boreal Forest Region.-This Region comprises the greater part of the forest area of Canada, forming a continuous belt from Newfoundland and the Labrador coast westward to the Rocky Mountains and northwestward to Alaska. The white and the black spruces are characteristic species; other prominent conifers are tamarack which ranges throughout, balsam fir and jack pine in the eastern and central portions, and alpine fir and lodgepole pine in the western and northwestern parts. Although the forests are primarily coniferous, there is a general admixture of broadleaved trees such as the white birches and poplars; these are important in the central and south-central portions, particularly in the zone of transition to the prairie. In turn, the proportion of spruce and tamarack rises northward and, with increasingly rigorous climatic conditions, the close forest gives way to the open lichen-woodland which finally merges into tundra. In the east there is, along the southern border of the Region, a considerable intermixture of species from the Great Lakes-St. Lawrence Forest such as the white and the red pines, yellow birch, sugar maple, black ash and eastern white cedar.

Great Lakes-St. Lawrence Forest Region.-Along the Great Lakes and the St. Lawrence River Valley lies a forest of a very mixed nature, characterized by the white and the red pines, eastern hemlock and yellow birch. With these are associated certain dominant broadleaved species common to the Deciduous Forest Region, such as sugar maple, red maple, red oak, basswood and white elm. Other species with wide range are the eastern white cedar and largetooth aspen and, to a lesser extent, beech, white oak, butternut and white ash. Boreal species, such as the white and the black spruces, balsam fir, jack pine, poplars and white birch, are intermixed and, in certain humid portions of the east, red spruce is abundant.

Subalpine Forest Region.-This is a coniferous forest found on the mountain uplands in Western Canada. It extends northward to the major divide separating the drainage of the Skeena, Nass and Peace Rivers on the south and to that of the Stikine and Liard Rivers on the north. The presence of the black and the white spruces plus aspen and birch indicates a close relationship with the Boreal Region, and the characteristic speciesEngelmann spruce, alpine fir and lodgepole pine-have boreal counterparts. There is some entry of blue Douglas fir from the Montane Forest and of western bemlock, western red cedar and amabilis fir from the Coast Forest. Other species found are western larch, whitebark pine, limber pine and, on the coastal mountains, yellow cedar and mountain hemlock.

Montane Forest Region.-The Region occupies a large part of the interior uplands of British Columbia as well as a part of the Kootenay Valley and a small area on the east side of the Rocky Mountains. It is a northern extension of the typical forest of much of the western mountain system in the United States and comes in contact with the Coast, Columbia and Subalpine Forests. Ponderosa pine is a characteristic species of the southern portions. Blue Douglas fir is found throughout but more particularly in the central and southern parts; lodgepole pine and aspen are generally present, the latter being particularly
well represented in the north-central portions. Engelmann spruce and alpine fir from the Subalpine Region together with white birch are important constituents in the northern parts. The white spruce, though primarily boreal in affinity, is also present here. Extensive prairie communities of bunch-grasses and forbs are found in many of the river valleys.

Coast Forest Region.-This is part of the Pacific Coast forest of North America, Essentially coniferous, it consists principally of western red cedar and western hemlock, with abundant Sitka spruce in the north and with the addition of Douglas fir in the south. Amabilis fir and yellow cedar occur widely and, together with mountain hemlock and alpine fir, are common toward the timber-line. Western white pine is found in the southern parts and western yew is scattered throughout. Broadleaved trees, such as black cottonwood, red alder and broadleaf maple, have a limited distribution. Arbutus and Garry oak, species whose centres of population lie southward in the United States, occur in Canada only on the southeast coast of Vancouver Island and the adjacent islands and mainland.

Acadian Forest Region.-Over the greater part of the Maritime Provinccs, exclusive of Newfoundland, there is a forest closely related to the Great Lakes-St. Lawrence Region and, to a lesser extent, to the Boreal Region. Red spruce is a characteristic though not exclusive species and associated with it are balsam fir, yellow birch and sugar maple, with some red pine, white pine and hemlock. Beech was once an important forest constituent but the beech bark disease has drastically reduced its abundance in Nova Scotia, Prince Edward Island and southern New Brunswick. Other species of wide distribution are the black and the white spruces, red oak, white elm, black ash, red maple, white birch, wire birch and the poplars. Eastern white cedar, though present in New Brunswick, is extremely rare elsewhere and jack pine is apparently absent from the upper St. John Valley and the western half of Nova Scotia.

Columbia Forest Region.-A large part of the Kootenay River Valley, the upper valleys of the Thompson and Fraser Rivers and the Quesnel Lake area of British Columbia contain a coniferous forest closely resembling that of the Coast Region. Western red cedar and western hemlock are the characteristic species in this interior "wet belt" Associated trees are the blue Douglas fir which is of general distribution and, in the southern parts, western white pine, western larch, grand fir and western yew. Engelmann spruce from the Subalpine Region is important in the upper Fraser Valley and is found to some extent at the upper levels of the forest in the remainder of the Region. At lower elevations in the west and in parts of the Kootenay Valley the forest grades into the Montane Region and, in a few places, into prairie grasslands.

Deciduous Foresi Region.-A small portion of the deciduous forest, widespread in the eastern United States, occurs in southwestern Ontario between Lakes Huron, Erie and Ontario. Here, with the broadleaved trees common to the Great Lakes-St. Lawrence Region, such as sugar maple, beech, white elm, basswood, red ash, white oak and butternut, are scattered a number of other broadleaved species which have their northern limits in this locality. Among these are the tulip-tree, cucumber-tree, papaw, red mulberry, Kentucky coffee-tree, redbud, black gum, blue ash, sassafras, mockernut and pignut hickories, and scarlet, black and pin oaks. In addition, black walnut, sycamore and swamp white oak are confined largely to this Region. Conifers are few and there is only a scattered distribution of white pine, tamarack, red juniper and hemlock.

Forest Land.-The forest area of Canada is estimated at $1,710,788$ sq. miles, about 57 p.c. of which is "productive" in the sense that it is capable of producing merchantable timber; the remainder is incapable of producing merchantable timber because of adverse climatic, soil or moisture conditions or is reserve forest land for which no inventories are available. Table 1 shows the areas of productive and non-productive forest land in each province and territory; forest land in each province classified by type of growth is given in Chapter X at p. 441.

## 1.-Productive and Non-productive Forest Land, by Province

| Province or Territory | Productive Forest Land | Non-productive Forest Land | Total |
| :---: | :---: | :---: | :---: |
|  | sq. miles | 日q. miles | 8q. miles |
| Newfoundland. | 33,862 | 58,930 | 87,792 |
| Prince Edward Island. | ${ }^{81} 813$ | 12121 | +934 |
| Nove Brotia. ${ }^{\text {Namam }}$ | 23,887 | 1,442 | 24,329 |
| Quebec........ | 220,625 | 157,500 | 378,125 |
| Ontario. | 164,568 | 97, 174 | 261.742 |
| Manitobs. | 58,189 | 64,632 | 122,821 |
| Saskatchewan. | 50,239 | 87.499 | 117,738 |
| Alberta. | 116,572 | 41,023 | 157,595 |
| British Columbia | 208,411 | 59,227 | 267,638 |
| Totals, Frovinces. | 892,246 | 542,742 | 1,434,988 |
| Yukon Territory. | 42,100 | 39,100 | 81,200 |
| Northwest Territories | 33,600 | 161,000 | 194,800 |
| Canada | 967,946 | 742,842 | 1,710,788 |

With help from the Federal Government, inventories of the forest resources are made periodically by provincial forest authorities and, with their co-operation, the federal Department of Forestry and Rural Development compiles the national forest inventory (see p. 447). The latest estimates of the total stand of timber, by province and region, appear in Table 2. These estimates are subject to constant revision as more accurate and complete inventories are compiled.
2.-Estimate of Standing Timber, by Type and Size and by Province and Region

| Province and Fegion | Coniferous |  |  | Broadleaved |  |  | Totals |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Large | ${ }_{\text {Material }}{ }^{\text {Small }}$ | Total | $\begin{gathered} \text { Large } \\ \text { Material } \end{gathered}$ | Material $^{\text {Small }}$ | Total | Large | Small | Total |
|  | $\begin{aligned} & \text { Million } \\ & \text { cu. ft. } \end{aligned}$ | $\begin{gathered} \text { '000 } \\ \text { cords } \end{gathered}$ | $\underset{\substack{\text { Million } \\ \text { cut. }}}{\text { gt. }}$ | Million cu. ft . | ${ }^{\prime} 000$ cords | Million cu. ft . | Million cu. ft. | '000 cords | Million cu. it. |
| Nemioundlar | 2,125 | 136,400 | 13,719 | 244 | 3,922 | 577 | 2,369 | 140,322 | 14,296 |
| Labrador. | 1,105 | 70,000 | 7,055 | 77 | 2, 568 | 277 | 1,188 | 72, 358 | 7,358 |
| Island............... | 1,020 | 86,400 | 6,664 | 167 | 1,569 | 800 | 1,187 | 67,969 | 6,964 |
| Prince Edward Ysland... |  | 1.828 | 175 | 7 | 800 | 75 | 27 | 2,629 | 250 |
| Nova Scotis | 2,149 | 50, 824 | 6,469 | 1,529 | 20.988 | 3,312 | 3,678 | 71, 812 | 9,782 |
| New Brunswick........... |  | 89,978 | 11,948 | 2,652 | 26,713 | 4,923 | 6,952 | 116,691 | 16,871 |
| Totars, Athantic Provincers..... | 8,594 | 279,031 | 32,311 | 4,432 | 52,423 | 8,888 | 13,026 | 331, 454 | 41,199 |
| Quebe Ontari | 59,702 21,584 | 290,220 530,236 | 84,371 66,654 | 17,472 25,468 | $\begin{array}{r} 73,985 \\ 228,825 \end{array}$ | 23,761 44,916 | $\begin{aligned} & 77,174 \\ & 47,050 \end{aligned}$ | $\begin{aligned} & 384,205 \\ & 759,061 \end{aligned}$ | $\begin{aligned} & 108,132 \\ & 111,570 \end{aligned}$ |
| Totals, Central Provinckg. .... | 81,286 | 820,456 | 151.025 | 42,98B | 302,810 | 68,677 | 124,224 | 1.123,266 | 219,702 |
| Manitoba... Saskatchew | 1,863 1,742 | 92,498 128,686 | 9,725 12,681 | 1,065 3,174 | 24,188 $8+909$ | 3,121 10,391 | ${ }_{4}^{2,928}$ | 116,686 | 12.846 23.072 |
| Alberta. | 18,241 | 207, 720 | 30,897 | 12,343 | 137,885 | 24,063 | 25,584 | 345, 605 | 54,960 |
| Totals, Prairif Provinctes. | 16,846 | 428,904 | 53,303 | 16,582 | 246,982 | 37,575 | 33,428 | 675, 886 | 90,878 |
| British Colom | 292,020 | 766,021 | 357,132 | 14,337 | 64,119 | 19,787 | 308,357 | 830,140 | 376,919 |
| Yukon Territory | 926 | 76,000 | 7,386 | 180 | 18,700 | 1,770 | 1,106 | 94; 700 | 9,156 |
| Northweat Territorie | 600 | 112,000 | 10,120 | 424 | 41,000 | 3,909 | 1,024 | 153,000 | 14,029 |
| Canad | 400,272 | 2,482, 412 | \$11,277 | 78,893 | 726,034 | 140,605 | 475,165 | 3,208,446 | 751,883 |

[^171]Tenure of Forest Land.-Corporations and private individuals own 9 p.c. of the productive forest land of Canada and 91 p.e. is in the possession of the Crown in the right of the federal or the provincial governments. Rights to cut Crown timber under lease or licence have been granted on 23 p.e. of the productive forest land; the remainder comprises unalienated productive forest areas and federal lands such as Indian reserves, military reserves, etc.

Woodlots on the 480,903 farms (1961) across the country comprise about 3 p.c. of the total productive forest. These small wooded tracta, ranging in size from three or four acres to 200 or more acres, are among the most accessible forests in Canada. Also, the woodioto of Eastern Canada are, in general, highly productive because they lie in the southern part of the country and frequently occupy soils that are considerably higher in quality than those typical of the northern forests.

## 3.-Tenure of Occupled Productive Forest Land, by Province

(Net area in sq. miles)

| Province or Territory | Provincial Crown Land |  |  | Federal Crown Land <br> Total | Privately Owned Land |  |  | Total Occupied Productive Forest Land |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Leases } \\ \text { and } \\ \text { Licences } \end{gathered}$ | $\begin{aligned} & \text { Permits } \\ & \text { and } \\ & \text { Sales } \end{aligned}$ | Total |  | Farm Woodlota | Other | Total |  |
| Newfoundland | 25,976 | - | 25,976 | - | 31 | 1,715 | 1,748 | 27.722 |
| Labrador. | 19.219 | $\llcorner$ | 19,219 | - | 1 | -715 | - | 18,819 |
| İsland... | 6,757 | - | 6,757 |  | \$1 | 1.715 | 1,746 | 8,505 |
| Prince Edward Island | - | - |  | 3 | 417 | 388 | 8005 | ${ }^{80} 888$ |
| Nova Scotia.. | 1,148 | 19 | 1,167 | $\begin{array}{r}81 \\ 413 \\ \hline\end{array}$ | 2,130 | 9,625 | 11,655 | ${ }_{23.198}$ |
| Quebec.. | 77,805 | - | 77, 805 | 225 | 6.678 | 18,436 | 25,114 | 103, 144 |
| Ontario. | 83,903 | - | 83,919 ${ }^{1}$ | 96 | 5.086 | 11, 105 | 16,191 | 100,206 |
| Manitoba. | 1.488 | 600 | 2.088 | 320 | 2,327 | 1,489 | 3,816 | 6.224 |
| Saskatchewan. | 1,815 | 1,000 | 2,815 | 592 | 2,216 | 2,081 | 4,297 | 7.704 |
| Alberta. | 7,659 |  | 7,659 | 1,631 | 3,317 | - | 3,317 | 12,607 |
| British Columbia. | 3,834 | 2,344 | 6,178 | 920 | 1,147 | 9.141 | 10,288 | 17,388 |
| Yukon Territory Northwest Territories | 二 | - | - | 25 2 | 2 | 二 |  | ${ }_{2}^{27}$ |
| Canada, | 214,081 | 3,963 | 218,01* | 4,258: | 25,274 | 64,339 | 89,613 | 311,881 |

${ }^{1}$ Includes 16 sq. miles of "other" provincia! Crown land. $\quad{ }^{2} \mathrm{Of}$ this total, 320 aq. miles are upder lease or kicence- 293 sq . miles in Alberta, the 25 sq . miles in the Yukon Territory, and the 2 sq , milea in the Northweat Territories.

Canada's Forest Trees.*-There are more than 150 tree species in Canada, of which 31 are conifers or 'softwoods' About two thirds of these softwoods and one tenth of the large number of the deciduous or 'hardwood' species are of commercial value.

The spruces are the most important forest trees in Canada. Although red spruce is found only in Eastern Canada, and Sitka and Engelmann only in the far west, black spruce and white spruce are found from the Atlantic almost to the Pacific, and northward to Alaska. About one third of Canada's timber volume is sprace. The wood is used for pulpwood, lumber and plywood.

[^172]Second only to the spruces are the two-needled pines-jack pine, which grows from Nova Scotia to northern Alberta and the Northwest Territories, and lodgepole pine in western Alberta, British Columbia and Yukon Territory. These pines comprise 11 p.c. of Canada's standing timber volume.

Third in importance are the true firs, of which the most widely distributed is the balsam fir, found from the Atlantic seaboard west to north-central Alberta. In the far west are three species: grand fir, which grows on the southern coast of British Columbia and in the southern interior; amabilis fir, found at intermediate levels on the coast; and alpine fir, which grows in the mountains and interior of British Columbia, the foothills of Alberta and southern Yukon Territory. The wood is commonly cut as pulpwood and, to a lesser extent, as cawlogs.

Next in abundance is a family of eight broadleaved deciduous trees: the trembling aspen, largetooth aspen, balsam poplar and five cottonwoods-the eastern, black, lanceleaf, narrowleaf and plains cottonwood. The most widely distributed is the trembling aspen, followed by the balsam poplar. The black cottonwood reaches the largest size in this family. In demand for veneer stock, this species and its hybrids will yield large wood volumes per acre on short rotations under intensive management. The other species in this group are used in the manufacture of excelsior and soda pulp.

Fifth among Canada's forest trees is the hemlock. Three species are native to Canada: eastern hemlock grows in the Maritimes, southern Quebec and Ontario; western hemlock at lower and intermediate levels throughout the coastal and interior wet belts of British Columbia; and mountain hemlock at higher elevations in the southern mountains of British Columbia, growing down to sea level on wet, exposed sites on the northern coast and the panhandle of Alaska. Western hemlock is a valuable pulpwood species. Eastern hemlock is a main commercial source of tannin and the wood is used for railway ties, wood-stave pipe, lumber and pulp. Mountain hemlock is not important as a timber species.

The tree responsible more than any other for British Columbia's world-wide reputation for timber is the coastal form of the Douglas fir, which is dominant in the forests of the south coast and the southeastern half of ,Vancouver Island. An interior form, the blue Douglas fir, is widely distributed throughout the Rocky Mountain system. Douglas fir is used extensively for lumber, plywood, construction timbers, piling and kraft pulp.

Next in order are the cedars, including arborvitae and yellow cedar. The eastern white cedar is found from western Nova Scotia to Manitoba; its wood is light and resistant to decay. The western red is of prime importance to British Columbia. In virgin forests, it attains heights of 150 to 200 feet and diameters of 8 to 10 feet. It is used for lumber, hand-split shakes, shingles, poles and posts. At higher altitudes on the British Columbia coast, the red cedar is replaced by the yellow cedar. The wood of this species also resists decay and is prized for boat-building and interior finishing. It is useful for poles, piling and as battery separators.

Finally, there are the birches. Moat abundant is the white birch which grows widely throughout Canada. Western white birch is a large tree, reaching heights of 100 feet and diameters of 3 to 4 feet. It is found in northern and western Alberta, in British Columbia and also on the Atlantic Coast in the east. However, the most important hardwood tree in Eastern Canada is the yellow birch, which grows in southern Newfoundiand, the Maritimes, Quebec and Ontario. Its wood is much in demand for flooring, furniture, veneer and railroad ties.

Canada is indeed fortunate to possess such a diversity of useful tree species. The white pine and spruce in the east, and Douglas fir, western red cedar and western hemlock in British Columbia have won for Canada its enviable position as the world'a leading nation in forest products trade.

## Section 2.-Forest Depletion

General information on forest depletion and increment as well as statistics on forest fires and fire losses are presented in this Section. The scientific control of the influences that account for wastage, such as forest fires, insect pests, etc., is dealt with in Section 4.

The latest information available on the rate and cause of depletion of reserves of merchantable timber is given in Table 4. Of the total depletion of the forests in the tenyear period 1953-62, 86 p.c. was utilized and 14 p.c. was destroyed by fire. (Information on the extent of damage caused by agencies other than fire, such as insects, disease and natural mortality, is not available. Losses from insects and diseases alone are estimated to be in excess of $1,000,000 \mathrm{Mcu}$. ft. of merchantable timber annually.) The average annual utilization of $3,232,353 \mathrm{M}$ cu. ft . comprised 50 p.c. $\log$ and bolts, 40 p.c. pulpwood, over 8 p.c. fuelwood and almost 2 p.c. other products. A little over 4 p.c. of the total utilization was exported in the form of logs and bolts and pulpwood.

The productive forests of Canada covering an area of $967,946 \mathrm{sq}$. miles constitute the reserve from which forest production will be obtained for many years to come. The supply of merchantable timber on this area is estimated at $751,883,000 \mathrm{M} \mathrm{cu} . \mathrm{ft}$. and the average annual utilization in $1953-62$ of $3,232,353 \mathrm{M}$ cu. ft. therefore represented less than one half of one per cent of the supply. However, it should be noted that utilization does not occur evenly throughout the productive forest area but is concentrated on the relatively small area of occupied forest land (land under lease, licence or private ownership). Thus, overcutting may occur on many of these occupied areas, emphasizing the need for orderly management of all commercial forests if the forest industries are to maintain their important position in the Canadian economy. Also, efficient utilization of cut timber is an important factor related to forest depletion.
4.-Forest Utilization and Depletion, Ten-Year Average 1953-62

| Item | $\begin{aligned} & \text { Usable } \\ & \text { Wood } \end{aligned}$ | $\begin{gathered} \text { Percentage } \\ \text { ot } \\ \text { optal } \\ \text { Depletion } \end{gathered}$ |
| :---: | :---: | :---: |
|  | M cu. it. |  |
| Products UtilizedLoga and Bolts- |  |  |
| Domestic use. | 1,608,424 |  |
| Exported..... | 8,399 |  |
| Domestic nse. | 1,153,597 | 30.7 |
| Exported. | 128,933 | 3.4 |
| Fuelwood.... | 276,731 | 7.4 |
| Other prodecta.. | 56,269 | 1.5 |
| Totals, Utilization. | 3,232,353 | 86.0 |
| Wastage- By fore | 526,220 | 14.0 |
|  |  |  |
| Totals, Depletion. | 3,758,573 | 100.0 |

Forest Fire Statistics.-There were 6,944 forest fires in Canada during 1964, 10 p.c. fewer than in 1963. Although the area burned over was more than six times larger than that burned in the previous year, only a little over one fifth of it was classed as merchantable timber land; the amount of saw timber lost was actually lower than in 1963 and amounted to only 5.8 p.c. of the $1954-63$ average. The amount of small material lost was more than four times higher than in 1963 and was also considerably higher than the ten-year average. In monetary terms, the estimated total damage was almost 53 p.c. higher than in 1963 but was less than half the ten-year average.

## 5.-Forest Fire Losses, 1963 and 1964, compared with Ten-Year Average 1954-63

| Item | Average | 1963 | 1964 |
| :---: | :---: | :---: | :---: |
| Totak, Fires. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . No. | ¢,142 | 7,670 | 6,944 |
| Fires under 10 acres........................................) " | 5,036 | 6,545 | 5,784 |
| Fires 10 acres or over . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ${ }^{\text {c }}$ | 1,106 | 1,125 | 1,360 |
| Area Buraed . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . acres | 2,388, 425 | 470,001 | 2,593,290 |
| Merchantable timber. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ${ }_{\text {, }}$ | 566.824 | 97,783 | 683, 826 |
| Young growth. | 509,557 | 114, 336 | 634,179 |
| Cot-over lands. | 317,216 | 63,485 | 32,082 |
| Non-forested lands | 994, 428 | 194,417 | 1,643,203 |
| Average Slze of Fire. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . acres | 389 | \$1 | 481 |
| Merchantable Timber Eurned- |  |  |  |
| Saw timber........................................... M ft. b.m. | 1,358,301 | 124,059 | 78,291 |
| Small material. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . cords | 2,921,547 | 743,150 | 3,209,497 |
|  | 13, $\mathbf{6 0 5 , 4 7 5}$ | 4,205,928 | 6,522,947 |
| Merchantable timber.......................................... | 9,401.355 | 2,640,283 | 4,715,002 |
| Young \&rowth................................................ | 2,655,960 | 785,651 | 1,222,675 |
| Cut-over lands................................................ . . . | ${ }^{429.083}$ | 221.454 | 96,766 |
| Other property burned......................................... \$ | 1,118,077 | 618,528 | 488,504 |
| Actual Cost of Flre Flghting . . . . . . . . . . . . . . . . . . . . . . . . . . \% | 5,661,610 | 4,772,714 | 4,432,041 |
| Totak, Damase and FIre Fighting Cost.............. \$ | 19,267,085 | 3,038,440 | 10,952,988 |
| Area under protection..................................... sq. s. wiles | * | 1,402, 185 | 1,514,924 |

${ }^{\text {t }}$ Figares do not include such values as damage to soil, stream-flow, wildive, recreation and toarist facilities,
6.-Forest Fire Losses, by Province or Area, 1963 and 1964, compared with Ten-Year Average 1954-63

| Province or Federal Lands | Average 1054-63 |  |  | 1963 |  |  | 1964 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Fires | Ares Burned | Fire Fighting Cost and Damage | Fires | Area Burned | Fire Fighting Cost and Damage | Fires | Area Burned | Fire Fightivg Cost and Damage |
| Prorince- | No. | acres | \$ | No. | acres | * | No. | acres | \$ |
| Newfoundland.... | 196 | 121,471 | 938,446 | 109 | 5,196 | 26,922 | 131 | 358,215 | 1,758,489 |
| Prince Edward Island........ | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Nova Scotia..... | 374 | 7.553 | 106.909 | 376 | 2.299 | 22.552 | 562 | 8,739 | 59,204 |
| New Brunswick. | 272 | 12,647 | 206,967 | 376 | 2,388 | 38,885 | 512 | 5,770 | 96,729 |
| Quebec. | . 811 | 158.947 | 2,446,850 | 1,172 | 96, 229 | 3,566,242 | 1,157 | 71,118 | 1.999,570 |
| Ontario... | 1,408 +356 | 205, 197 | 5,362,601 | 1,885 | 56,138 | 1,831,430 | 1,829 | 28,124 | 1,243,675 |
| Manitoba........ | 356 | 503.029 | 1,194,138 | 443 | 70,477 | 188,912 | 581 | 836,278 | 1,182,812 |
| Saskatchewan.... | 228 | 283,758 | 809,693 | 255 | 141,507 | 772,746 | 460 | 1,174,174 | 1,893,394 |
| Alberta. ${ }_{\text {Aligh }}$ | 380 | 159, 471 | 2.729,676 | 554 | 17,609 | 1,466,334 | 351 | 18.007 | 1,141,877 |
| Federal Lands- <br> Yukon <br> Territory <br> Northweat Territories. National Parks... Indian lands. Other federal lands (incl. military areas) |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  | 62 | 191,194 | 276,392 | 44 | 11,679 | 55,615 | 25 | 480 | 4,019 |
|  |  |  |  |  |  |  |  |  |  |
|  | 78 36 | 284,413 | 410,050 | 69 | 19,897 | 89,194 | 162 | 470,484 | 1,192,737 |
|  | ${ }^{36}$ | ${ }_{i} \mathbf{8} 9$ | $\underset{2}{40,325}$ | 229 | ${ }_{:} 186$ | 2, ${ }^{3} 184$ | $: 25$ | $\underset{3}{12,819}$ | $\underset{2}{49.702}$ |
|  | 19 | 609 | 2,595 | 13 | 59 | 798 | 19 | 1,336 | 32,004 |

[^173]In 1964, lightning accounted for 29 p.c. of all forest fires and 80 p.c. of the total area burned. Thus, almost three quarters of the fires but only one fifth of the area burned were ascribed to human error. Recreationists were responsible for the greatest proportion of man-caused fires.

## 7.-Forest Fires, by Cause, 1563 and 1964

| Csuce | 1963 |  | 1964 |  | Cause | 1963 |  | 1964 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | p.e. | No. | p.c. |  | No. | p.c. | No. | p.c. |
| Recreation, .......... | 2.080 | 27 | 1,617 | 23 | Uuknown............ | 240 | 3 | 391 | 6 |
| Settlement.......... | 864 | 11 | 959 | 14 |  |  |  |  |  |
| Woods operations.... | 124 | 2 | 217 | 3 | $\begin{aligned} & \text { Totals, Man- } \\ & \text { Caused...... } \end{aligned}$ | 5,319 | 69 | 4,955 | 71 |
| Railwaya. . . . . . . . . | 231 | 3 | 220 | 3 |  |  |  |  | . |
| Other industries..... | 417 | 6 | 238 | 3 | Lightning. | 2,351 | 31 | 1,989 | 29 |
| Incendiary........... | 323 | 4 | 381 | 6 | Totals, All |  |  |  |  |
| Miscellaneous known. | 1,040 | 13 | 832 | 13 | pires..... | 7,670 | 104 | 6,944 | 10* |

## Section 3.-Statistics of Forest and Allied Industries

This Section is concerned with the many industries engaged in the felling of timber and its transformation into a great variety of products required in modern living. The extensive forests of Canada provide raw materials for several large and growing primary industries, i.e., the sawmills and planing mills, the shingle mills, the veneer and plywood mills, the particle board plants and the pulp and paper mills, which in their turn provide raw materials for a wide range of secondary industries that convert the products of the primary industries into more highly manufactured goods such as sash, doors, mill work, wooden boxes, furniture, converted papers and paper goods, etc. However, much of the output of the primary forest industries is exported; the sawmill industry and the pulp and paper industry, especially, contribute substantially to the value of the export trade of Canada and thereby provide an important part of the foreign exchange necessary to pay for the imports from other countries.

Statistics of manufacturing activity and total activity of the wood industries and the paper and allied industries may be found in a number of tables in Chapter XVI on Manufactures. These statistics and those included in the tables of this Section are based on the revised standard industrial classification and the new establishment concept, explained in Chapter XVI.

## Subsection 1.-Woods Operations

The forests of Canada provide the raw materials for its sawmills and planing mills, shingle mills, veneer and plywood mills, particle board plants and pulp and paper mills as well as roundwood for export in unmanufactured state and other products such ss fuelwood, poles and piling, fence posts, mining timber, Christmas trees, etc. Tables 8 and 9 give the estimated quantities of wood cut in Canada by province and by type of product.
8.-Volume of Wood Cut, by Province, 1959-63

| Province or Territory | 1959 | 1960 | 1961 | 1962 | 1963 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | M cu. ft. | M cu.ft. | M cu. ft. | M cu. ft. | M ou. ft. |
| Newfoundland. | ${ }^{981}, 695$ | 126,702 | 98,014 10.157 | 74.649 5.514 | 89,097 6,045 |
| Prince Edward Island | 10,594 | 10,884 98,095 | 10,157 | 5,514 81,907 | 86, ${ }^{6,54}$ |
| Nova Scotia, | 89,812 172,602 | 98,095 187.297 | 96,747 193,346 | 81,907 | 198,258 |
| Ourebec... | 877,158 | 879,914 | 914,096 | 876,043 | 913.542 |
| Ontatio | 331, 528 | 541,329 | 494.048 | 519,414 | 535,077 |
| Manitoba | 51.766 | 45,255 | 37.602 | 53,160 | 41.656 |
| Saskatchewan | 44,621 | 49,860 | 44,036 | 47,844 131706 | - 13,098 |
| Alberta | 135.003 | 148,485 | 1, 118,890 | $\begin{array}{r}131,706 \\ \hline 1,496,892\end{array}$ | 1.621, ${ }^{1349}$ |
| British Columbia | $1,173.965$ $2,8 \pm 3$ | $1,337,997$ 5,697 | $1,295,038$ 1,815 | 1,496,882 | 1.62, 3,965 |
| Canada | 3,18f,387 | 3,431,465 | 3,308,28\% | 3,431,802 | 3,671,236 |

9.-Volume of Wood Cut, by Type of Product, 1361-63

| Type of Product | 1961 |  | 1962 |  | 1963 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity Reported or Estimated | Equivalent Volume in M cu. ft. ${ }^{3}$ | Quantity Reported or Eatimated | Equivalent Volume in M cu. $\mathrm{ft} .{ }^{1}$ | Quantity <br> Reported or Estimated | Equivalent <br> Volume in Mcu.f. ${ }^{1}$ |
| Logs and bolts............ M ft. b.m. | 8,800,339 | 1,084,991 | 9,934,202 | 1,894,740 | 10,903,237 | 2,083,854 |
| Pupwood. . . . . . . . . . . . . . . . cord | 15,474,266 | 1,315,314 | 14,624,151 | 1,243,052 | 15, 511, 520 | 1,318,479 |
| Fuelwood...................... | 2,903,845 | 239,508 | 2,816,193 | 225,296 | 2,643,700 | 210,896 |
| Poles and piling........... M cu.ft. | 24,820 | 24,820 | 25,887 | 25,887 | 18,88t | 18,881 |
| Round mining timber........ cord | 77,394 | 6,578 | 67,479 | 5,716 | 64,694 | 5,498 |
| Frace poata................... . No. | 10,453,678 | 12,545 | 13,481,772 | 16,178 | 18,797,800 | 22,557 |
| Fence raile..................... " | 769,845 | 770 | 894,083 | 894 | 732,550 | 733 |
| Woad for charcoal. . . . . . . . . . . cord | 38.750 | 3,100 | 39,500 | 3.160 | 46.000 | 3,680 |
| Migcellaneous roundwood. . M M cu. It. | 15.663 | 15,663 | 16,879 | 16, 879 | 6,658 | 6,658 |
| Tetals. | $\cdots$ | 3,303,259 | ... | 3,431,80\% | $\cdots$ | 3,671,236 |

[^174]
## Subsection 2.-Wood Industries

The standard industrial classification subdivides the wood industries group into the following industries: sawmills and planing mills, shingle mills, veneer and plywood mills, sash, door and other millwork plants, hardwood flooring mills, wooden box factories, the coffin and casket industry and miscellaneous wood industries. The latter item is further subdivided into the wood preservation industry, the wood handles and turning industry, the woodenware industry, the cooperage industry and miscellaneous wood industries, n.e.s.

The sawmills and planing mills, the shingle mills, the veneer and plywood mills and the particle board plants (the latter are included in the miscellaneous wood industries, n.e.s. group) mainly use roundwood as a raw material and sometimes are called primary wood industries and are dealt with separately below. The other industries, which constitute the secondary wood industries, further manufacture part of the production of the primary wood industries into a great variety of products. However, most of the production of the primary wood industries is not further processed.

Sawmill and Planing Mill Industry.-Lumber is by far the most important single product of this industry and, as shown in Table 10, British Columbia is the most important province in this field. It should also be noted that the shipment figures of Tables 10 and 11 contain a certain element of duplication because sales of lumber from one sawmill to another will be reported as shipments by both establishments. Similar situations occur in most industries to a greater or lesser extent.

In addition to the lumber produced by the sawmill and planing mill industry, a small amount is produced by establishments classified to other industries, bringing total lumber production in Cansda in 1964 to $10,363,564 \mathrm{M}$ ft.b.m.
10.-Lumber Production and Shipments and Value of All Shipments of the Sawuill and Planing Mill Industry, by Province, 1964

| Province or Territory | Lumber |  |  | Value of Shipments of Goods of Own Manufactare |
| :---: | :---: | :---: | :---: | :---: |
|  | Production | Quantity Shipped | Value of Sbipments |  |
|  | M ft. b.m. | M ft. b.m. | \$'000 | \$000 |
| Newfoundland. | 16,847 | 20,957 | 1,598 | 1,887 |
| Prince Edward Island. | 5,482 | 2,270 | 1,152 | ,220 |
| Nova Scotia. . ${ }^{\text {a }}$. . . | 206,452 | 175,778 | 12,779 | 15,761 |
| New Brunswick | 352,427 1 | - 332, 135 | 25,031 | 32,561 |
| Quebec..... | 1,373,982 | 1, 264,293 | 95,233 | 116,807 |
| Ontario. | 753,453 | 689.552 | 61,084 | 74,358 |
| Manitobs..... | 22,145 | 22,495 | 1,306 | 1,886 |
| Saskatchewan. | 54,982 351,179 | 76,264 408.883 | 4,786 22,60 | 5, 5,912 |
| Alberta ${ }^{\text {British }}$ Columbia | 351,179 | 408,883 | 22. 100 | 26,598 |
| British Columbian............... Yuton and Northwest Territories | $8,913,630$ $\mathbf{9}, 452$ | $7,424,458$ 7,440 | 506,204 597 | 578,735 650 |
| Canad*. | 10,060,031 | 14,424,525 | 736,870 | 855,235 |

11.-Quantity and Value of Lumber Shipments of the Sawmill and Planing Mill Industry, by Species, 1964

| Kind of Wood | Quantity | Value | Kind of Wood | Quantity | Value |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | M it. b.m. | \%'000 |  | M lt. b.m. | \$ 000 |
| Spruce. | 3,993,185 | 249,080 | Yellow birch................... | 139,483 | 16,643 |
| Douglas fir | 2,246,785 | 156,816 | Maple.......................... | 152,903 | 16,953 |
| Hemlock. | 1,783,355 | 126,649 | Lodgepole pine.................. | 305,206 319,840 | 16.096 $\mathbf{2 5 , 0 7 0}$ |
| Cedar. | 714, 122 | 62.637 |  |  | 2, |
| White pine. | 313,899 | 30.408 |  |  |  |
| Balsam fir. | 179,559 | 11,893 18,628 |  |  |  |
| Jack pine....... | 276,238 | 18,628 | Totals................... | 10,484,525 | 730,876 |

Shingle Mill Industry, -Most of the shingles and shakes produced in Canada are from British Columbia mills. All establishments classified to this industry reported, for the year 1964 , shipments of $1,913,934$ squares of shingles and shakes valued at $\$ 24,462,000$, of which British Columbia accounted for $1,894,216$ squares valued at $\$ 24,301,000$. However, it should be mentioned that considerable quantities are produced by establishments classified to other industries and by individuals intermittently operating one or two shingle machines or producing by hand; although no adequate measure of this production is available, it is known to contribute significantly to the total. Of the total production in 1964, 2,558,511 squares were exported, 2,503,290 squares going to the United States.

Veneer and Plywood Industry.-The production of hardwood veneer and plywood in Canada is confined largely to the eastern provinces and the production of softwood veneer and plywood almost entirely to British Columbia. For the latter, Douglas fir is most commonly utilized because of the availability of large diameter logs of this species from which large sheets of clear veneer can be obtained. Of the hardwoods, yellow birch is by far the most important species. Although most of the raw materials for this industry are of Canadian origin, some decorative woods are imported, particularly walnut.

About 30 p.c. of the shipments of veneer, shown in Table 12, are softwood veneers; most of these are further manufactured into plywood by Canadian mills, thus contributing to the shipments of plywood shown in the same table. Some of the hardwood veneers are also shipped to other veneer and plywood mills for further manufacture or to other industries such as the furniture industry for veneering purposes, but a significant portion is exported. Total exports in 1964 amounted to $830,917 \mathrm{M}$ sq. ft. valued at $\$ 28,811,000$, of which $781,650 \mathrm{M}$ sq. ft. valued at $\$ 26,290,000$ went to the United States.

Most of the plywood is consumed in Canada, although exports are not unimportant; in 1964 these amounted to $48,362 \mathrm{M}$ sq. ft . of hardwood plywood valued at $\$ 8,465,000$ and $455,421 \mathrm{M}$ sq. ft. of softwood plywood valued at $\$ 29,385,000$. The greater part of the exports of hardwood plywood went to the United States ( $45,251 \mathrm{M}$ sq. ft . valued at $\$ 7,554,-$ 000 ) but most of the softwood plywood exports went to Britain ( $406,770 \mathrm{M}$ sq.ft. valued at $\$ 26,338,000)$.
12.--Veneer and Plywood Shipments, by Type, 19*2-64

| Type | 1962 |  | 1963 |  | 1964 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity | Value | Quantity | Value | Quantity | Value |
|  | M sq. ft . | 8300 | M sq. it. | \$ 000 | M sq. tt . | \$'000 |
| Veneer. . | 1,437,540t | 27,980 | 1,662,6041 | 31,570 | 1,453,7331 | 32,598 |
| Softwood plywood.. | 1,739,663: | 89.643 | 1,885,923 ${ }^{2}$ | 103,559 | 1,475,197: | 115,300 |
| Hardwood plywood. . | 322,441: | 34,020 | 364,090 ${ }^{\text {a }}$ | 37,430 | 372,008 ${ }^{2}$ | 38,080 |

## Subsection 3.-Paper and Allied Industries

The standard industrial classification subdivides the paper and allied industries group into the following industries: the pulp and paper industry, the asphalt roofing manufacturers, the paper box and bag manufacturers, and other paper converters. Statistics of manufacturing activity and total activity of the paper and allied industries group are given in Chapter XVI on Manufactures.

Pulp and Paper Industry.-This industry is by far the most important of the group. In fact, it has been for many years the leading industry in Canada, contributing over 4 p.c. of the total gross national product and almost 17 p.e. (1964) of the total value of the country's exports. Of the 131 pulp and paper mills in operation in 1964, 31 were making pulp only, 25 were making paper only and 75 were combined pulp and paper mills.

These mills consume enormous quantities of roundwood, $16,147,000$ rough cords with a cost value of $\$ 402,270,000$ being so used in 1964 . In that year, 114,000 cords of pulpwood were imported and $1,235,000$ cords were exported. In addition, the pulp and paper mills use wood residues of the sawmill and other industries for pulping, such as cores of peeler logs, slabs and edgings or wood chips made thereof, shavings, etc., and recently even sawdust has been used successfully for this purpose. The total of such wood residues used by the industry in 1964 amounted to the equivalent of $3,500,000$ rough cords of pulpwood, valued at $\$ 68,710,000$. The industry also consumes large amounts of electric power, chemicals and other goods and services and requires great quantities of clean water.

Some of the production of the pulp and paper industry is consumed in Canada or serves as a raw material for the paper-using or secondary paper and allied industries and certain other industries, but a great part of it is exported, particularly newsprint and various
types of pulp (see Table 15), most of it to the United States. Some plants included in the pulp and paper industry classification also convert basic paper and paperboard into more highly manufactured papers, paper goods and boards but their output represents only a small part of Canada's total production of converted papers and boards. Tables 13 and 14 give shipment and production figures for pulp and shipment figures for basic paper and paperboards for 1960-64, Table 15 shows exports of pulp and of newsprint to Britain, United States and all countries for $1960-65$, and Tables 16 and 17 give world pulp and newsprint statistics for 1963 and 1964.

## 13.-Pulp Shipments and Production, 196e-64

| Item | 1960 | 1961 | 1962 | 1963 | 1964 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Mill Sbipments of Pulp ${ }^{\text {c. . . . . . . . . . . . }}$, 040 tons | 8,084 | 3,335 | 3,690 |  |  |
|  | 368,598 | 352,078 | 436, ${ }^{3} 280$ | 479,040 | 54,4505 |
| Groundwood pulp. . . . . . . . . . . . . . . . . . 0 '009 toms | , 267 | ${ }^{260}$ |  | ${ }^{2} 287$ | -321 |
|  | 18,252 | 17,665 | 20.201 | 19,612 | 21,988 |
| Chemical pulps. . . . . . . . . . . . . . . . . . . . . . 0000 tons | 2,795 | 3,048 | 3,377 | 8,708 | 4, 055 |
|  | 349,694 | 374,221 | 415,937 | 458,773 | 525,790 |
|  | 11,461 | 11,779 | 12,133 | 12,474 | 13,742 |
| Quebee................................ | 4,469 | 4,578 | 4,611 | 4,732 | 5.204 |
| Ontario. | 2.967 | 2.981 | 3,052 | 3,074 | 3,317 |
| Britieh Columbia | 2,124 | 2.256 | 2,411 | 2.501 | 2,827 |
| Other provincest. | 1,901 | 1,964 | 2,059 | 2,167 | 2,393 |

${ }^{1}$ Includes screeninge and unspecified pulps,
${ }^{2}$ The differencee between these figures and the quantities of mill atipmenta represent the amounts of pulp furtber manufgctured by the reporting companiee. Edward Island is the only province in which there is no production.

## 14.-Shipments of Basic Paper and Paperboard, by Type and by Prorince, 1964-64

| Type and Province | 1960 | 1961 | 1962 | 1963 | 1964 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Type |  |  |  |  |  |
|  | 6,773 793.470 | 6,674 803,732 | 6,648 818,078 | 8,639 809,247 | 7,377 887,613 |
| Book and writing paper.................. . 000 tons | ${ }^{7} 801$ |  |  |  | 491 |
| ( ${ }^{\prime} 000$ | 105,915 | 112.283 | 119,405 | 126,651 | 138,157 |
| Wrapping paper . . . . . . . . . . . . . . . . . . . . . . . 0000 tons | , 301 |  | -323 | 334 | 340 |
| $\$^{\prime} 000$ | 65,918 | 66,731 | 69,892 | 72,457 | 78,431 |
| Paperboard. . . . . . . . . . . . . . . . . . . . . . . . . . . 0 '000 tons |  | 1.018 | 1,092 | 175,214 | 187, ${ }^{297}$ |
| All otber papers, . . . . . . . . . . . . . . . . . . 0000 tong | 141, 321 | 149,532 | 156.995 ${ }_{164}$ | 175.184 178 | 187,772 200 |
| All otber papers. . . . . . . . . . . . . . . . . . . . . | 21.247 | 24,132 | 25,128 | 27,375 | 34,138 |
| Totals. . . . . . . . . . . . . . . . . . . . . . . . '0e0 tons | $\begin{array}{r} 8,581 \\ 1,127,870 \end{array}$ | $\begin{array}{r} 8,558 \\ 1,156,416 \end{array}$ | $\begin{array}{r} 8,661 \\ 1,100,498 \end{array}$ | $\begin{array}{r} 8,825 \\ 1,210,914 \end{array}$ | $1,32,111$ |
| Province |  |  |  |  |  |
| Quebec. . . . . . . . . . . . . . . . . . . . . . . . . . . 0 000 tont | 3,703 478,823 | 3,726 488,534 | 3,765 504,061 | 3,798 509,685 | 4,236 567,560 |
| Ontario. . . . . . . . . . . . . . . . . . . . . . . . . . . . . 000 tons | 2,450 | 48,454 | 2.518 | 2,527 | 2,729 |
| Ontario................................ 51000 | 352,183 | 357,714 | 376.444 | 384,603 | ${ }^{411,501}$ |
| British Columbis. . . . . . . . . . . . . . . . . . . ${ }^{0000}$ tons | 1,086 132,193 | 1.117 150.778 | 1,161 157.097 | 155.599 | 169, 1488 |
|  | 132,193 1,342 | 150.778 1,261 | 157.097 1.219 | 155.599 1,299 | 169,468 |
|  | 164,671 | 159,384 | 152,896 | 161,026 | 175,493 |

[^175]
## 15.-Wpports of Pulp and of Newsprint to Britain, United States and All Countries, 1960-65

| Commodity and Year | Britain |  | United Ststes |  | All Countries |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity | Value | Quantity | Value | Quantity | Value |
| Pulp | tons | \$000 | tons | \$000 | tons | \$'000 |
| 1960. | 282,747 | 32.203 | 1,999,755 | 256,170 | 2,601,457 | 325.122 |
| 1961. | 278, 846 | 31.023 | 2,178,585 | 258,949 | $2,868,844$ | 346,561 |
| 1962. | 251,742 | 27,723 | 2,388,802 | 298.166 | 3,044,458 | 369,902 |
| 1963. | 279,834 | 31.621 | 2,505,689 | 309,915 | 3,339.492 | 405,292 |
| 1964. | 338,663 | 38.464 | 2,676,940 | 346,017 | 3,636,281 | 460,854 |
| 1065. | 347,167 | 40,404 | 2,812,616 | 370,380 | 3,852,650 | 493,501 |
| Newsprint |  |  |  |  |  |  |
| 1960. | 460,537 | 60, 103 | 5.229.909 | 631,230 | 6,190,286 | 757.930 |
| 1961. | 456,962 | 59.294 | $5.228,158$ | 629.792 | 6,253,717 | 761,313 |
| 1982. | 481.822 | 63.452 | 5.227 .006 | 633,037 | 6, 148.294 | 753.050 |
| 1963 | 458,814 | 80.213 | 5,251,125 | ${ }^{636}, 086$ | 6,211,846 | 759,990 |
| 1964. | 480.332 | 61,791 | 5,675,627 | 689.406 | 6, 815, 629 | 834.646 |
| 1985. | 370,372 | 46,932 | 6,112,414 | 735,611 | 7,189, 700 | 868,586 |

World Pulp and Newsprint Statistics.-Figures of production, exports and imports of pulp for certain countries of the world are shown for 1963 and 1964 in Table 16. It is estimated that these countries produce over three quarters of the world supply of pulp.
16.-Production, Exports and Imports of Puip, by Leading Countrles, 1963 and 1964
(Sovect: FAO Year Book of Foreat Products Stafistica)

| Country | 1863 |  |  | 1964 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Production | Exporta | Importa | Production | Exporte | Importa |
|  | '000 tons | '000 tons | '000 tons | '000 tons | '000 tons | '000 toos |
| Canadar.. | 12,421 | \$,339 | 64 | 13,246 | 3,695 | 76 |
| United States. | 29,427 | 1,422 | 2,776 | 32,255 | 1.605 | 2,089 |
| Finland...... | 5,317 | 2,135 | 47 | 3.970 | 2,380 | 3 |
| Norway. | 1,757 | 863 | 56 | 2,014 | 978 | 50 |
| Sweden.. | 6,384 | 3.537 | 7 | 7,130 | 3,909 | 3 |

${ }^{1}$ Production figures differ slightly from DES figures given in Table 13 because of a different basis of calculation.
Figures for the leading newsprint-producing countries for 1963 and 1964 are given in Table 17. The six countries listed accounted for over 71 p.c. of the estimated world production in 1964, Canada contributing over 41 p.c.

## 17.-Estimated World Newsprint Production and Exports, by Leading Countries, 1963 and 19ct

(Source: Newsprint Aseociation of Canada)

| Country | 1963 |  | 1964 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Production | Exports | Production | Exports |
|  | '000 tons | '000 tops | '000 tons | '000 tons |
| Canaidal. | 6,630 | 6,100 | 7,301 | \$,759 |
| United States.. | 2,218 | 118 | 2,261 | 117 |
| Britain........ | 753 1.009 | 26 907 | 840 1.074 | 1989 |
| Sweden..... | 1,009 | 907 | 1.074 | 988 |
| Norway..... | 300 | 474 233 | 756 383 | 509 269 |

[^176]Asphalt Roofing Manufacturers.-These establishments produce composition roofing and sheathing, consisting of paper felt saturated with asphalt or tar and, in some cases, coated with a mineral surfacing. They also produce asphalt, vinyl-asbestos and pure vinyl floor tiles. Their total shipments in 1964 were valued at $\$ 55,579,000$.

Paper Box and Bag Manufacturers.-This industry includes manufacturers of folding cartons and set-up boxes, manufacturers of corrugated boxes and manufacturers of paper bags. Their total shipments in 1964 amounted, respectively, to $\$ 136,801,000$, $\$ 179,183,000$ and $\$ 115,256,000$.

Other Paper Converters.- This group produces a host of paper products such as envelopes, waxed paper, clay coated and enameled paper and board, aluminum foil laminated with paper or board, paper cups and food trays, facial tissues, sanitary napkins, paper towelling and napkins, toilet tissue, etc. The total value of manufacturing shipments of this industry in 1964 amounted to $\$ 236,412,000$.

## Section 4.-Forest Administration, Research and Conservation

## Subsection 1.-Federal Forestry Program

Administration.-The Federal Government is responsible through several departments and agencies for the protection and administration of the forest resources of the Yukon and Northwest Territories and of other federal lands such as the National Parks, Indian reserves, military areas and forest experiment stations.

The main forestry functions of the Department of Forestry and Rural Development* (established as the Department of Forestry in 1960 and re-named in 1966) include: (1) provision for the conduct of research relating to the protection, management and utilization of the forest resources of Canada and the better utilization of forest products; (2) undertaking, promoting or recommending measures for the encouragement of public co-operation in the protection and wise use of the forest resources of Canada; (3) co-operating with provincial governments and others by means of agreements relating to forestry matters; ( 4 ) provision of forest surveys and advice relating to the protection and management of federally administered forest lands; and (5) assuming responsibility for forest protection and management on federal lands at the request of the department or agency concerned. The Act provides for the establishment of research facilities and of forest experimental areas on federal lands.

The Department maintains an Advisory Group to the Deputy Minister, whose main responsibilities are to develop policies and long-range plans for forest research, forest products research, forest economics and other such matters as federal-provincial relations and liaison with the forest industries and the academic community. A Directorate of Program Co-ordination provides national co-ordination of forestry research programs and supervises national research services at Ottawa. Research institutes and laboratories conduct fundamental research within prescribed fields, supporting and complementing the research programs carried out in seven administrative regions-Newfoundland, the Maritimes, Quebec, Ontario, Manitoba-Saskatchewan, Alberta-Yukon Territory-Northwest Territories, and British Columbia. Forest surveys are conducted on federal lands throughout the country and advice and assistance on forest management are given to the administering agencies. The Department also provides for the management of forests, including timber disposal, in certain areas on behalf of other government departments. Co-operation is extended to the External Aid Office in administering technical assistance programs involving forest surveys in other countries. The Department's public information program includes the issuing of publications designed to increase public awareness of

[^177]the importance of Canada's forest resources and the need for conserving them; the distribution of research publications and the interpretation of the scientific work of the Department to industry and to the general public; the dissemination of departmental and forestry information to the press, radio and television; the production of exhibits, displays and posters; and the maintenance of a photographic library dealing with forestry subjects.

The research functions of the Department and the Federal-Provincial Forestry Agreements program are described in the following paragraphs.

Research on Silviculture, Tree Biology, Forest Soils and Fire.-The objects of such research are (1) to provide basic information on the characteristic occurrence, growth, development and behaviour of forest tree species throughout the wide range of forest types and environmental conditions of Canada and (2) to develop and test new or improved methods for use in forest management and forest fire control. The programs are conducted throughout Canada, often in co-operation with other federal departments, provincial forest authorities, other research agencies, universities and industry.

Many of the silvicultural studies involve assessing the factors responsible for the success or failure of natural regeneration following various cutting methods and treatment of seedbeds, comparing different methods of seeding and planting, and determining the effects of different methods of intermediate cutting on the development of residual trees and stands. Studies are made of successional changes in most of the important forest types. Application of silvicultural techniques as well as research in regulation of cut and in methods of protection is aimed at determining how forests may be maintained at the highest levels of production. The relationships between forest growth and site are being studied with a view to the assessment of long-term productivity. The requirements of light, temperature and moisture that will produce optimum conditions for growth and development are being determined for seedlings. The physiological processes of growth and reproduction are under investigation for a limited number of species. In tree breeding, superior strains are selected or developed and there is a continual improvement in propagation and breeding techniques. Research in forest land encompasses forest geography and land classification. Research in soils is directed toward determining the relation of tree growth and nutrition to chemical and physical properties of the soil.

Techniques used to measure the volume, distribution and growth of the forest resource are constantly under review and study; new methods are tested and developed. Research in forest inventory methods is of increasing importance because of the continuing programs of forest inventories being conducted in most provinces and in the northern territories. Data from air photographs are correlated with field observations to develop new techniques for estimating timber. Research is continuing in methods for measuring tree images to determine heights, crown widths, canopy density and other data from photographs taken in different seasons under various conditions. The use of large-scale photography of sample areas is also being investigated and studies are being made in the identification of species and sub-types. Data on the growth and development of typical forest conditions are being collected on many thousands of semi-permanent sample plots.

Adequate protection of forests against fire is of vital importance in Canada. The Department works in full co-operation with provincial forest services in almost all phases of forest fire control and has made major contributions in the fields of forest fire danger measurement and forecasting and in fire control planning. Investigations are being made of forest fire behaviour, of the use of prescribed fire for hazard reduction and seedbed preparation, of better methods of reporting forest fires, and of fire damage appraisal and related factors in forest protection standards. Studies are being continued in the use of chemicals for fire suppression and pre-suppression, of fre fighting equipment and techniques, and of the use of aircraft in forest fire control. Another important field of endeavour is the study of fire hazard created by slash from various kinds of logging practices in difierent species.

Forest Products Research.-This work is directed toward obtaining background data on the properties of Canadian woods, developing new and better uses for wood
products, improving manufacturing processes, and effecting more complete utilization of wood substances. Activities cover all major aspects of forest products and include the determination of the physical, mechanical, chemical and anatomical properties of wood and their relation to adaptability in use; studies of factors affecting quality of wood and of manufactured wood products; determination of factors that cause wood waste in logging and manufacturing; investigation into fire retardant treatments, the preservative treatment and painting of wood and the use of wood for the manufacture of a variety of producta by chemical or mechanical means; and studies to determine possible new economic and more valuable uses for woods and to determine methods for the economical utilization of all wood substances available from the annual timber harvest.

The program is conducted mainly at two laboratories-at Ottawa and Vancouverwith units consisting of timber engineering, containers, glues and gluing, veneer and plywood, timber physics, wood chemistry, pulping, wood preservation, paints and coatings, wood pathology, products entomology, wood anatomy, logging, lumber manufacture and lumber seasoning. Research results are made available to the thousands of plants comprising Canada's timber-manufacturing and wood-using industries. Liaison is maintained with these industries to ensure that the research being conducted is of optimum national benefit. There is also constant co-operation with various government units in the performance of many investigations concerned with the use of wood. Research into the use of wood in housing construction and as an engineered material continues in co-operation with the National Research Council and the Central Mortgage and Housing Corporation.

At regional establishments, products research is planned on utilization problems of regional interest, and products liaison officers visit sawmills and other wood-working plants to keep industry aware of research developments and technical advances and, on the other hand, to keep the department informed of field problems on which research would be of value.

Departmental personnel serve on many national and international technical committees concerned with forestry problems and continuous collaboration is maintained with forest products laboratories in other countries for the dual purpose of exchanging information and avoiding duplication of research.

Forest Insects and Diseases.-Research on forest insects and diseases is conducted at regional laboratories and field stations in all principal forest regions of Canada. A Canada-wide survey is undertaken in co-operation with the provincial forest services and forest industries to maintain an annual census of forest insect and disease conditions and to detect and predict the occurrence of outbreaks. Survey results are made available to owners and operators of forest lands for use in planning salvage programs and directing control measures to reduce damage.

Laboratory research programs are designed to lead to comprehensive understanding of the biology and ecology of the more destructive forest insects and fungi, and the causes of fluctuations in abundance or severity of damage in time and place. Problems under intensive study include insect defoliators, leaf diseases, sucking insects, dwarf mistletoes, stem cankers, bark- and wood-boring beetles, trunk and root decays, tip- and root-boring insects and diseases of tree seedlings in forest purseries. Research on development, physiology, nutrition and taxonomy complements the field ecological studies of insects and fungi. Problems of national importance in insect pathology, cytology and genetics, bioclimatology and chemical control are investigated.

Experiments are also carried out in insect and disease control, utilizing cultural techniques, chemicals and biological control agents including parasitea, predators and insect pathogens. Technical advisory services are provided in evaluating quarantine programs, possibilities of eradication or control, or other applications of research results. Examples include recommendations for reduction of seedling losses in forest tree nurseries through cultural techniques and chemical applications; the co-operative organization of cull surveys to improve forest inventories; consultation and advisory services for local
authorities on the Dutch elm disease problem; and technical co-operation with provincial governments and industrial agencies in the organization of spraying operations against the spruce budworm in New Brunswick, the jack pine sawfly in Quebec, and the hemlock needle miner and ambrosia beetle in British Columbia.

Federal-Provincial Forestry Agreements.-The passing of the Canada Forestry Act in 1949 was an event of great significance to federal-provincial relations in the field of forestry, as authority was given to the then Minister of Mines and Resources to "enter into agreements with any province for the protection, development or utilization of forest resources" Subsequently, this Act was replaced by the Department of Forestry Act, 1960 (re-named the Department of Forestry and Rural Development Act in 1966). Since the beginning, agreements have been entered into with most provinces; these now provide for federal financial support for programs of forest inventories and reforestation, for the purchase of capital assets to be used in forest fire protection and for forest access and stand improvement projects.

Under the Act, a composite forestry agreement was entered into with the provinces for a term of two years ending Mar. 31, 1967. This agreement includes in "a single package" the federal aid available for the above-mentioned purposes and also gives the provinces considerably greater freedom to allocate funds among the specified fields of work. A total of $\$ 7,910,000$ of federal funds is available annually, the allocation to the provinces being in proportion to their productive forest areas.

Federal assistance is based on payment of 50 p.c. of provincial costs but reforestation is the one exception; the Federal Government pays $\$ 15$ per thousand trees planted, $\$ 4$ per acre seeded with ground preparation, $\$ 2$ per acre seeded without ground preparation, and $\$ 2$ per acre for seedbed preparation to promote natural regeneration and, in addition, contributes 25 p.c. of the cost of establishing or expanding forest nurseries. Costs of management-type surveys are included in the agreement as sharable, and the reforestation of occupied or unoccupied Crown land qualifies for assistance provided it is carried out by the province.

Since 1951, more than $\$ 56,000,000$ in federal funds has been contributed to the provinces under the main forestry agreements, plus $\$ 6,253,000$ for aerial spraying in New Brunswick against budworm infestations and, on a smaller scale, in British Columbia and Quebec against the budworm and jack pine sawfly, respectively, and $\$ 663,000$ under a special forest improvement agreement with Nova Scotia, designed to provide woods experience for coal miners laid off in the Cape Breton area.

Work accomplished with federal assistance has included the completion of forest inventories by seven provinces. Most of the provinces have instituted programs concerned with management-type inventories and at the same time are maintaining their initial inventories in a reliable state. As a result of these inventories, new woods operations have sprung up, particularly in the British Columbia interior, and new pulp and paper mills have been built or are planned in other areas of Canada. The Federal Government has contributed under the agreements to the establishment of 16 new forest nurseries and five seed extraction plants and to the planting of $307,215,000$ trees. Federal contributions of $\$ 16,166,000$ have been used for the purchase of fire towers, radios, motor vehicles, bulldozers, muskeg tractors, power pumps, hand pumps, hose, aircraft, and the construction of buildings required for the prevention, detection and suppression of forest fires and for the charter of aircraft for patrol, transportation and water-dropping purposes. Several hundred access projects designed to improve protection and permit the management of undeveloped forest areas have been undertaken, resulting in the construction of nearly 4,000 miles of road and 38 airstrips, with the Federal Government contributing more than $\$ 21,301,000$.

## Subsection 2.-Provincial Forestry Programs

All forest land in provincial territory, with the exception of the minor portions in National Parks, federal forest experiment stations, military areas and Indian reserves, is administered by the respective provincial governments. The forestry program of each province is outlined below.

Newfoundland.-Geographically, the Province of Newfoundland has two separate regions-the Island and Labrador on the mainland. The productive forest land of the Island is estimated at $12,984 \mathrm{sq}$. miles and of Labrador at $20,878 \mathrm{sq}$. miles, a total of 33,862 sq. miles. Most of Labrador's forests are leased but are as yet virtually untouched. Only 578 sq . miles are classified as farm woodlots.

A large part of the forest land in the interior of the Island is leased, licensed or owned by paper companies, but a three-mile-wide belt along most of the coastline is retained as unoccupied Crown land for the purpose of providing firewood, construction material, fencing material, etc., for the local populations. Within this coastal forest belt, every household has legal right to cut $2,000 \mathrm{cu} . \mathrm{ft}$. of wood a year for domestic use. This form of cutting is generally without intense control or restriction but a policy is being introduced whereby cutting in certain 'management areas' is controlled by forest officers. Approximately one half of the Crown forests are at present under management. Commercial timber-cutting on unoccupied Crown lands has been by permit since 1952; permits for amounts up to 120 cords per person are issued by the field staff but permits for larger quantities must be approved by the government. This type of permit is generally preceded by advertising of standing timber for sale by tender, the timber involved usually being overmature or damaged by fire, insects or storms.

The Island is divided into three forest regions, each of which is subdivided into five districts. Each region is under the control of a regional forester and each district is headed by a district ranger with a staff of rangers and assistant rangers. Twenty-eight wellequipped forest fire depots and 21 lookout towers, connected by radio-telephone, are operated by the Newfoundland Forest Service; others are operated by the Newfoundland Forest Protection Association, the two paper companies and the Canadian National Railways. The Forest Service operates eight aircraft for fire detection and water bombing, and two helicopters for transporting men and equipment.

Forestry operations in Labrador are under the supervision of a regional ranger located at Happy Valley (Goose Airport). The permanent staff of about 90 persons is augmented by a like number of seasonal employees during the fire season. Forest fire protection bases are located near Goose Airport and at the Carol Lake mining development area. The two paper companies maintain their own fire protection organizations.

Prince Edward Island.-Almost all of Prince Edward Island's woodland is privately owned, so that the Forestry Division of the Department of Agriculture is concerned mainly with planting, woodlot management and fire protection. A small nursery, established jointly with the Federal Government, deals with the Island's needs by providing planting stock for the reforestation of waste lands, the cost of which is shared by the Federal Government, and fulfilling the requirements of private individuals at a reasonable cost.

In proportion to its size, Prince Edward Island exports a great deal of pulpwood. This export, combined with the fuelwood and lumber cut each year, led to the inauguration of a program designed to educate the owner in the proper care and management of bis woodlot.

Fire protection does not usually constitute too great a problem. Wooded areas are scattered in patches throughout the province and, since a network of roads makes all woodlots accessible, equipment can be brought to the scene of a fire quickly and easily. Research is limited mainly to reforestation and woodlot management problems.

Nova Scotia.-The land area of Nova Scotia is 20,402 eq. miles. Of this area, 16,274 sq. miles are classed as forested and 93 p.c. of the latter is regarded as productive. Although 91 p.c. of the forest land in Canada is held by the Crown in the right of the federal and provineial governments, only 22 p.c. is so held in Nova Scotia.

The provincial Crown lands are administered by the Department of Lands and Forests through a etaff of foresters and rangers. Similarly, trained personnel are employed with some of the forest industries in the administration of privately owned forest lands. The Department administers the Lands and Forests Act as it pertains to all lands and is responsible for forest fire suppression. Forest fire detection is facilitated through 32 observation towers and an aerial patrol service, all integrated with land vehicles and headquarters by radio and telephone communication systems. Fire suppression crews and rangers with equipment are stationed throughout the province.

The forest industry is of prime importance to the economy of Nova Scotia. There are in operation about 500 sawmills of various types and sizes, one newsprint mill, two groundwood pulp mills and a cbemical pulp mill; construction of a second chemical pulp mill and a hardboard plant is under way. These mills, along with the export pulpwood trade and pitprop production, produced about $250,000 \mathrm{M}$ ft. b.m. of sawn materials and about 650,000 cords of round products in 1965. Twenty-eight sawmills were equipped for the production of pulp chips from sawmill residue and the equivalent of about 85,000 cords of chips was produced from slabs and edgings.

The reforestation program, which has been active for many years, is being expanded with respect to non-forested land and experimental work on land preparation on fre barrens is being conducted. In 1965 approximately $1,000,000$ trees were removed from the six forest nurseries for planting in the field, mostly on non-forested land.

Forest management programs include the construction of access roads into Crown land timber areas and stand improvement under federal-provincial agreementa. Timber, pulpwood and Christmas trees are sold through public tender and cutting on Crown land is done under recommendation of district foresters of the Department of Lands and Forests. Management cruises, regeneration studies and experimental cuttings are conducted on Crown lands and an active program of operating these lands under sustained-yjeld management plans is well under way. Silvicultural techniques are being expanded to operational Jevels on Crown lands.

Forest research is carried on by Federal Government agencies and the Nova Scotia Research Foundation. Investigations involve stand improvement, cutting methods, and insect and disease activities. Extension projects include fire prevention, a film program for schools, distribution of information on forest and wildlife conservation, promotion of the Christmas tree industry, woodlot improvement, preparation of material for the mass media, and technical assistance to sawmil! operators.

New Brunswick.-Of the total land area of New Brunswick (27,835 sq. miles), approximately 86 p.c. is classed as productive forest, of which the Crown, in right of the province, owns about one half. About 2 p.c. is owned by the Federal Government and the remainder is privately owned. The report of a provincial forest inventory, part of the national forest inventory, was published in 1958. The total volume of wood in merchantable sizes is estimated at $16,900,000 \mathrm{M}$ cu. ft.; coniferous species make up 71 p.c. and deciduous species the remainder.

Protection from forest fires, the first requirement for forest conservation, is mainly the responsibility of the Department of Lands and Mines which also carries out duties in connection with game management and protection, provincial parks, and the administration of provincial Crown lands. A large-scale aerial spraying program to protect balsam fir and spruce from the spruce budworm has been carried on since 1952 by a Crown company sponsored by the federal and provincial governments and by representatives of the forest products industries. Forest Management Licences issued by the province
authorize operators to cut and remove forest products in accordance with forest management plans and cutting permits. Royalty is paid to the province when products are cut by the licensees.

New Brunswick does not maintain a forest research organization but co-operates with the federal Department of Forestry and Rural Development in that field. The University of New Brunswick has also undertaken a small number of forest research projects in co-operation with the National Research Council, the provincial government and other interested organizations.

In the field of education, the University of New Brunswick offers undergraduate and graduate courses in forestry leading to B. Sc.F. and M. Sc.F. degrees. It is also responsible for the administration of the Maritime Forest Ranger School in conjunction with the Governments of New Brunswick and Nova Scotia and with private industry. The forest extension services of the University assist both government and private agencies in the direction and planning of various forestry extension programs. The provincial Department of Agriculture also provides an expanding extension service to the owners of farm woodlots

Quebec.-The forest lands of the Province of Quebec cover an area of $270,418 \mathrm{sq}$. miles extending from its southern borders to latitude $52^{\circ} \mathrm{N}$, between the frontier of Labrador in the east and the Eastmain River Basin in the west. Of this total, 85,451 sq. miles are classed as occupied productive forest land, where tree-felling is done under lease and permit. The area owned privately covers 25,114 sq. miles and federal Crown forests, 225 sq . miles. Approximately 117,481 sq. miles of the productive forest lands of Quebec are unoccupied. About one third of the annual cut comes from privately owned lands.

The Woods and Forests Division of the Department of Lands and Forests administers the public forests of Quebec, including management and inspection, protection against pests and fire, the latter service extending to certain private forests, the taking of inventories, the issuing of operations permits and mill permits, the measuring of all timber cut, the control of shipments of timber outside Quebec, the collecting of stumpage dues, etc., the reclaiming of territories suited to forestry operations, the operation of nurseries and of student forestry camps, the supplying of technical assistance and information to forest owners, and rural forestry management.

The forests reserved for industry are leased as 'forest concessions' and a cutting licence is renewed annually as long as the concessionnaire has complied with conditions imposed. The licence specifies the amount of timber of each variety to be cut, where it is to be cut, tree diameters, etc. The Division supervises all cutting and requires full reports concerning planned operations. All wood cut on Crown lands must be measured by licensed cullers and be in accordance with official regulations. The measuring, in addition to establishing the amount of wood cut, is used as a basis for the reckoning of wages of forestry workers under contract and for the calculation of stumpage dues, which are sent monthly to the recipient and payable one month after receipt. Unleased forest land may be worked directly by the Division, or worked under contract or special agreement with private companies.

Quebec's forest protective system comprises three organizations-the Protective Service of the Department, the protective associations and the non-affliated lease holders or owners. The Protective Service, in addition to its direct protection functions, enforces the legislation and regulations governing forest fire protection over the whole province. The protective associations, of which there are six, are syndicates of lease holders and of owners who have formed an association to satisfy the Jaw which compels them to protect their limits or private forests of 2,000 acres or over. Members assume half the costs of fire fighting incurred by the associations. The third group is composed of lease holders or owners who prefer to discharge their obligations personally as far as forest protection is concerned. They are subject to the same obligations and privileges as the associations. Certain rural municipalities also take some responsibility for forest protection in their areas in co-operation with the Protective Service.

In its efforts to perpetuate the forest resources of the province on a sustained-yield bssis, and to rehabilitate the areas that cannot reconstitute themselves, the Division has established 24 nurseries, the first of them at Berthierville in 1908. Some of them are large permanent establishments covering all phases of production and others are secondary or movable nurseries working with partly grown seedlings. The present stock of all nurseries is in the neighbourhood of $70,000,000$ plants. Plants for the re-stocking of private properties are supplied free on request.

Ontario.-The boundaries of Ontario enclose an area of $412,582 \mathrm{sq}$. miles- 83 p.e. land and 17 p.c. water. Forest lands comprise 75 p.c. of total land, of which $105,262,000$ acres are classified as productive. The Crown owns 90 p.c. of the productive forest land.

Although 84 tree species (exclusive of the hawthorns) occur within Ontario, four species (black spruce 29 p.c., poplar 19 p.c., jack pine 13 p.c. and white birch 11 p.c.) account for almost three quarters of the total volume of standing trees. The total gross volume has been eatimated at $151,000,000 \mathrm{M} \mathrm{cu} . \mathrm{ft}-61$ p.c. softwoods and 39 p.c. hardwoods.

Crown forests are administered and managed through the Department of Lands and Forests, which has 10 branches at Head Office and 22 forest districts (grouped within seven regions). The Branches may be classified as service (Accounts, Law, Operations, Personnel, and Research) and operating (Fish and Wildlife, Forest Protection, Lands and Surveys, Parks, and Timber). The list of operating Branches indicates that a multiuse concept of forests is practised but only the programs that foster the growth and use of timber as a crop are discussed here.

Management.-The original function of the Timber Branch was to arrange for the orderly sale of timber and this important function is still carried out along traditional lines-operators are granted a licence to cut specified timber for which they pay stumpage at contractual rates on the measurement (scale) of products removed. However, the details and techniques of utilization are undergoing constant improvement. Although Ontario's forest-based industries have long been a Canadian leader in terms of diversity of products and value of shipments, there is still a surplus of allowable timber cutting over actual cutting in the province. To ensure the continuing supply of timber of the type required by industry, an effective management policy has been conceived. Continuing forest inventories, using aerial photographic methods in which the province pioneered, provide an up-to-date record of the forest wealth, showing the species and other characteristics of stands and their geographical distribution. Inventory data are then applied to management planning; the province has been divided into 216 management units, each homogeneous with respect to forest and use patterns. Long-term plans set out regulations on the volume and location of cuttings and include programs for regeneration and tending that will sustain yields. As of 1965,162 plans ( 77 Crown, 66 company, and 19 agreement forest) were completed for approximately 170,000 sq. miles.

The Timber Branch is also responsible for the maintenance and improvement of forest production on Crown lands. It operates 10 forest tree nurseries (with their supporting tree seed collection, treatment, and storage plant), currently geared for an annual output of $60,000,000$ units. In addition to plantings by Departmental staff, regeneration agreements have been signed with all major licensees under the terms of which they assume responsibility for the conduct of projects, receiving payment at an agreed rate for work completed. Other annual silvicultural measures include the direct seeding of over 5,000 acree, the scarification of 23,000 additional acres for natural seeding, and stand improvement treatment (cleaning, thinning, pruning, etc.) on 43,000 acres.

Over the past few years, the Research Branch has been developing a "tubeling" approach to planting, as a conventional planting substitute possessing greater flexibility both in nursery production and in length of planting period per year, so that unforeseen conditions, such as large burns, can be stocked promptly. Briefly, the procedure is to place 200 open-end, split plastic tubes (about $\frac{1}{2}^{\prime \prime} \times 3^{\prime \prime}$ ) in a tray, add soil, seed and covering material, and germinate in portable plastic-covered greenhouses. The tubes and
seedlings can be inserted intact into the ground at a rate of about 250 per man-hour. Limited testing has proved that this method is practicable and, during the summer months of 1966, a large-scale project ( $27,000,000$ ) was conducted across the province.

For half a century, Ontario has had enabling legislation that permits municipalities to place abandoned and submarginal agricultural lands, to which they have acquired title, under agreement with the Department of Lands and Forests, which undertakes to plant and manage the properties for a specified period of time-usually 50 years. Nearly 200,000 acres currently under such agreements have been managed intensively, the plantations receiving regular thinnings. The trees removed are in demand for pulpwood, posts, poles and sawlogs, making the undertakings financially attractive. In addition, the properties that are close to centres of population are acquiring tremendous value as recreational areas.

Owners of private land may purchase planting stock for forestry purposes from government nurseries at nominal prices and may also receive free professional advice on any forestry matter, including silviculture, harvesting and marketing. Under new legislation (the Woodlands Improvement Act, 1966) the service to owners is greatly expanded and it is now possible to have planting and improvement work carried out completely under government direction and mainly at its expense. In return, the owner is required to meet a few modest demands that ensure his good faith.

A new but small group developing within the Timber Branch-the Economics Unitis undertaking, in co-operation with other specialists, feasibility studies to lead to the establishment of forest-based manufacturers in under-developed areas, to expand and improve the statistical information of the forestry sector, to provide market information, and to analyse the economic implications of Departmental practices and proposals as a means of strengthening the value of services provided.

Expansion currently under way or completed within 1965-66 by major firms dependent upon timber products, permits a prediction that wood utilization in Ontario will incresse by at least $1,000,000$ cords a year by 1968 . This very favourable rate of capital formation, together with the present dynamic approach to forest management, is assurance that a viable, broadly based forest industry is developing on a sound business basis.

Protection.-The area under organized forest protection in Ontario totals $176,000 \mathrm{sq}$. miles and includes the main central band of accessible forests. This area is organized into 21 fire districts and further subdivided into 54 chief ranger divisions for the purpose of forest protection. South of this area, in the highly developed agricultural counties of southern Ontario, the municipalities are responsible for fire control; the vast inaccessible areas to the north of the fire districts, totalling some $190,000 \mathrm{sq}$. miles, do not support significant stands of merchantable timber and, except for communities or other special values, are not protected. Within the fire districts, agreements were in effect in 1965 with 214 municipalities and 225 timber licensees for the prevention and control of forest fires. An agreement was also in effect with the Federal Government for the protection by the Ontario Department of Lands and Forests of 873,000 acres of Indian lands in the province. The average annual number of fires for the 1950-64 period was 1,360 and the average annual burn was 152,623 acres.

Forest fire detection is accomplished through a 310 -lookout-tower system and through aerial patrols as well as public reports. During the autumn of 1965, an infra-red aerial detection system was evaluated and will be further appraised in 1966 for the detection of lightning fires. Also in 1965, 300 northern Ontario Indians were recruited and trained to provide a readily available body of skilled forest fire fighters at various key centres. Prescribed burning for hazard reduction and site preparation purposes was carried out on 12 burns covering 1,560 acres, a program scheduled to be increased to 7,000 acres in 1966 . A new water-bombing system utilizing the interior of aircraft floats to carry the water load was developed in 1965, a design that increases the water concentration in the drop pattern by several times over the existing external tank system on Beaver and Otter aircraft.

Water-bombing aircraft took action on 70 fires in Ontario in 1965. At the end of 1965, the fleet consisted of 41 aircraft-six turbo-Beavers, 24 standard Beavers, 10 Otters and one Super Widgeon. Five helicopters were leased during the fire season. The communication system included 174 ground stations, 308 lookout-tower radios, 15 patrol vessels, 538 mobile radio telephones, 1,046 portable fire-line radios and 41 aircraft radio telephones.

Forest pest control programs were carried out on about 10,000 acres of Crown owned or managed forest lands in 1965. The main effort was concentrated on the European pine sawfly, the white pine weevil and the white pine blister rust. Experimental work was carried out with the chemical Bidrin, a systematic pesticide, to test the effectiveness of protecting individual elm trees with it against the conventional spraying method for controlling Dutch eIm disease.

Manitoba.-The central administration of Manitoba's forests is organized into two Branches-Forest Management and Forest Protection. Each is in charge of a director and is a Branch of the Department of Mines and Natural Resources. The Province is divided into eight regions, each under a regional supervisor who is responsible to the Branch directors.

The Management Branch co-ordinates control measures for the propagation, improvement and management of the forests, the harvest of forest products, and forest inventory surveys. Two nursery stations are maintained to supply stock for reforestation of denuded Crown land and some natural seed areas have been established for nursery stock. Seedlings are supplied to farmers for shelterbelts and woodlots and to commercial Christmas tree producers. The program of forest stand improvement comprises thinning, clearing and chemical spraying to remove undesirable species and encourage growth of preferred trees. Forest inventories cover 3,000 to $4,000 \mathrm{sq}$. miles annually and on the basis of these inventories working plans with annual allowable cuts on a sustained-yield basis have been brought into operation.

Timber-cutting rights are awarded by Forest Management Licences, Timber Sales and, in certain cases (particularly for salvage operations), by Timber Permits. Forest Management Licences may be granted for periods of up to 20 years and are renewable. Timber Sales may be for varying periods from one year upward and Timber Permits for periods of up to one year. At present, one long-term Pulpwood Berth with an area of $2,745 \mathrm{sq}$. miles and 10 long-term Timber Berths, all granted prior to 1930 , are in force. A second Pulpwood Berth agreement was signed early in 1966, covering the construction of a pulp mill and sawmill at The Pas and debarking units placed near Arnot in northern Manitoba.

The area of the province under forest fire protection is $120,000 \mathrm{sq}$. miles with zones of priority established in the less accessible areas. Fires are detected through a comprehensive network of lookout towers and supporting air and ground patrols, all tied together by radio and Departmental or public telephones. Two Canso water-bombers and two helicopters are rented for the worst of the fire season to supplement the aircraft of the Manitobs Government Air Service.

The province has no forestry research organization but co-operates with several federal services which maintain two research areas in the province. The Department co-operates fully with federal authorities in investigating and controlling forest damage resulting from insects and diseases. Public education in the fields of fire prevention and forest conservation is carried out and use is made of all usual methods including radio, television, newspapers, signs, talks to school children and club members, film tours, ete.

Saskatchewan.-The forests of Saskatchewan are located mainly in the northern half of the province and cover 117,738 sq. miles, or 53 p.c. of the total land area. Provincial forests constitute approximately 92 p.c. of all forest land in the province and are managed and developed by the Forestry Branch of the Department of Natural Resources.

The Forestry Branch, consisting of six divisions-Administration, Fire Control, Forest Management, Forest Research, Inventory and Silviculture-is responsible for developing and evaluating forest policies and management programs based on the findings of inventory and research. The responsibility for carrying out such policies and programs is borne by the various regional administrative authorities. For purposes of resource administration, the province, with the exception of the most northern portion, is divided into three regions, each under the supervision of a regional superintendent. The regions are subdivided into conservation officer districts which vary in size according to resource base and population to be served. In the most northern part of the province, because of various special programs with northern residents, resource administration is the responsibility of the Northern Affairs Branch of the same Department. Close liaison is maintained between the Forestry Branch and the various regional authorities.

A major responsibility of the Forestry Branch is the development of techniques in the prevention, detection and suppression of forest fires. A network of 72 lookout towers equipped with two-way radios is maintained throughout the province and is supplemented by three aircraft on regular patrol duty during the high-hazard periods. A group of smokejumpers, trained to parachute on remote fires, is in constant readiness during the fire season and, if necessary, takes immediate suppression action which it maintains until relieved by overland crews. Northern Saskatchewan's communication system, with more than 990 two-way radio sets in operation in towers, vehicles, aircraft and forest camps, plays a vital role in the detection and suppression of forest fires. These activities are assisted by the use of helicopters and aircraft equipped for water-dropping.

Alberta.-The 157,595 sq. miles of provincial forest in Alberta are administered by the Alberta Forest Service of the Department of Lands and Forests at Edmonton. The Service, headed by the Director of Forestry, is composed of five Branchea-Administration, Forest Protection, Forest Management, Forest Surveys and Planning, and Forestry Training.

For ease of administration the forest area has been divided into 11 Forests, each responsible for the forest within its boundaries. These Forests are composed of Ranger Districts in which all activities are supervised by the district forest officer responsible to his superintendent. Each Forest staff includes: forest superintendent, fire control officer and assistant, forester, mechanical foreman, carpenter foreman, equipment operators, scalers, land-use officers, radio operators, clerks, stenographers, and seasonal help such as standby fire crews, lookout men, general labourers and construction crews. Some Forests have minimum security crews that are employed in forest management, protection and construction projects.

The Administration Branch supervises all branches, maintains general control over revenue and expenditure, maintains the equipment inventory and deals with personnel.

The Forest Protection Branch has charge of all phases of protection ineluding prevention, detection, suppression and use of forest and prairie fires. The Branch also plans, supervises and executes the construction and maintenance of the road and building programs and supervises the radio communication facilities.

The functions of the Forest Managment Branch include the acceptance and approval of management and annual operating plans prepared for leased and licensed Crown lands, implementation of management plans prepared by the Department, supervision of proper land-use practices and the disposal of Crown timber. This extends to all phases including processing of timber applications, selection of timber to be sold, cruising of merchantable timber, inspection of cutting areas to ensure proper logging and utilization practices, scaling of forest products, collection of dues and fees and reforestation programs for areas denuded by cutting and fire. It is also responsible for the implementation and supervision of the new timber quota system.

The Forest Surveys and Planning Branch maintains the provincial forest inventory and prepares and maintains detailed inventories by management units; prepares long- and short-term management plans; provides timber application forest-type maps; conducts other work pertaining to photogrammetry and forest-cover maps; develops and supervises recreational area plans; provides regulation of geophysical activities in the forest area; and provides technical drafting and mapping services to the Forest Service and the general public.

The Forestry Training Branch prepares training material and conducts training programs for Departmental personnel and other persons concerned with activities of fire control, forest management, forest protection and conservation. It also provides the facilities and instruction for the second year of a two-year forest technology course provided by the Northern Alberta Institute of Technology. The Branch organizes and supervises the activities of the Junior Forest Warden Clubs.

One Forest and part of two others are included in the Rocky Mountains Forest Reserve. This area is administered by the Alberta Forest Service but decisions of the Director of Forestry are based on policies of wise watershed regulation formed by the Eastern Rockies Forest Conservation Board. The Board comprises one federal and two provincial members. This reserve includes part of the headwaters of the main Prairie Provinces river system. Research in general is carried out by the federal Department of Forestry and Rural Development, which maintains the Kananaskis Experiment Station.

British Columbia.-The productive forest land of British Columbia is inventoried (1958) at $208,411 \mathrm{sq}$. miles with an additional 59,227 sq. miles of forest land classed as non-productive. Of the productive area, immature timber occurs on $95,739 \mathrm{sq}$. miles; $84,275 \mathrm{sq}$. miles carry mature timber estimated at $251,000,000 \mathrm{M} \mathrm{cu}$. ft.; and $28,397 \mathrm{sq}$. miles are unclassified, including areas of burn, cut-over or windfall not yet restocked.

Of Canada's annual production of lumber, which reached a record $10,000,000 \mathrm{M} \mathrm{ft}. \mathrm{b}. \mathrm{m}$. 1965, British Columbia contributes about 68 p.c. of the total and 72 p.c. of the softwood. Although the Canadian economy consumes about 96 p.c. of its hardwood lumber, almost two thirds of the softwood is exported, making this commodity one of the country's major export items.


For administrative purposes, the province is divided into five Forest Districts with regional headquarters at Vancouver, Prince Rupert, Prince George, Kamloops and Nelson. Further decentralization of authority is effected by subdivision into Ranger Districts, of which there are approximately 25 in each Forest District. Twelve directional, servicing or policy-forming Divisions constitute the head office of the Forest Service at Victoria.

Efforts continue to bring British Columbia's forest resources under sustained-yield management and the forest industries are making progress toward more complete utilization of their raw materials. The probjem is urgent despite the fact that, with a present annual scale of approximately $1,533,000 \mathrm{M} \mathrm{cu}$. ft., the total inventory would appear sufficient to support current needs in perpetuity. One of the more spectacular results of sustained-yield administcation has been the swinging of a greater proportion of the annual forest harvest to the interior of the province. The over-cut coast (wet belt) forests now account for about 56 p.c. of the total forest cut each year and the interior for 44 p.c. For all practical purposes, the entire interior forest is publicly owned; the great majority of privately owned, leased or licensed forests are on the coast.

Several systems of timber disposal are in effect. The most publicized is the Tree Farm Licence, which constitutes a contract between the government and a company or individual whereby the latter agrees to manage, protect and harvest an area of forest land for the best possible return, in excbange for the right to the timber crop on the area. Tree Farm Licences are subject to re-examination for renewal every 21 years. Provincial Forests, Pulp Harvesting Forests and Public Sustained-Yield Units are the governmental equivalent of the Tree Farm Licence with the timber, when it is ready for cutting, being disposed of by public auction. Of major interest is the Pulpwood Harvesting Area plan, unique in North America, which calls for the integration of a 'sawlog' economy with a new pulp industry; five of these Areas have now been established-three in Prince George Forest District, oue in Prince Rupert Forest District and one in Kamloops Forest District. Management, silviculture, roadbuilding and protection on such Areas are the responsibility of the Forest Service. Other tenures of lesser importance are Tree Farms, Farm Woodlot Licences, and those Timber Sales issued outside 'regulated' areas.

Forest fire prevention techniques and organization for effective forest fire suppression are vital aspects of planned sustained-yield management. A greatly expanded pulp industry, added to the long-established logging and sawmill industries, has increased the necessity for more adequate fire control. Extensive use is made of aircraft under various terms of contract. Air tankers and fire-spotter aircraft are employed during the fire season and helicopters and other aircraft are employed under contract for patrol duties and for the transport of fire suppression crews. The rugged topography and the many remote and sparsely populated areas of the province demand the availability of a variety of transportation methods to tie in with fast discovery and early attack on all forest fires.

Close liaison with the federal Department of Forestry and Rural Development, through facilities at Victoria and Vernon, provides detailed information on insect and fungal enemies of the forest and on fire research.

## Subsection 3.-The Pulp and Paper Research Institute of Canada*

The Pulp and Paper Research Institute of Canada is a centre of research and learning concerned with virtually every aspect of the production and use of pulp and paper products. It was established in 1913 as a branch of the Dominion Forest Products Laboratories and in 1927 was reorganized under the joint sponsorship of the Canadian Pulp and Paper Association, the Federal Government and McGill University. The Institute staff carries out fundamental research and some applied research in the fields of woodland operations and pulp and paper mill operations. In addition, in co-operation with McGill University,

[^178]it trains postgraduate students who are working toward master's and doctorate degrees in physical chemistry, wood chemistry, or chemical and mechanical engineering, and whose theses subjects lie in fields of interest to the pulp and paper industry.

The Institute occupies a building on McGill campus erected by the pulp and paper industry and a building at Pointe Claire on the western outskirts of Montreal constructed by the Government of Canada. The Institute's facilities include: organic and physical chemistry, physics and engineering laboratories; pilot plants for chemical pulping, pulp and chip refining and waste liquor pyrolysis; a greenhouse and other facilities for woodlands research; an extensive library; shops and special facilities for pulp and paper testing and for photographic and microscopic (both light and electron) studies of wood, pulp and paper. It has a staff of about 195 .

The Institute's research activities comprise a basic program in pulp and paper research and in woodlands research, contract research, and technical services. The basic pulp and paper research program is supported by assessments from the Maintaining Membership (some 42 companies, representing more than 100 mills and about 95 p.c. of the total production of the Canadian industry) and by a grant from the Canadian Pulp and Paper Association. The woodlands research program is supported by assessments on all member companies of the Canadian Pulp and Paper Association east of the Rockies that use pulpwood and by a grant from the Association. Both programs comprise research of interest to the industry broadly, as distinct from that which is the concern of a single company only.

The projects in the basic programs range from studies of the growing seedling in the forest to the converted pulp and paper product, and fall into seven broad classifications: woodlands, mechanical pulping, chemical pulping, paper making, process control, product quality and waste utilization. The Institute is regarded as a centre for broad, long-range and uninterrupted studies of basic priaciples and for major engineering research and development projects which individual pulp and paper companies would find difficult to justify if the costs were not shared. Moreover, the Institute is a centre of highly specialized equipment and manpower which individual companies would not normally have.

In addition to its permanent staff, the Institute, in co-operation with McGill University, has some 40 graduate students working on fundamental projects in the background of pulp and paper technology, which also serve as their theses topics. The Head of the Institute's Wood Chemistry Division, who is also the E. B. Eddy Professor of Industrial and Cellulose Chemistry at McGill, directs graduate student work on such subjects as the behaviour of the materials of which wood is made-cellulose, lignin and hemicelluloses. The Head of the Institute's Physical Chemistry Division, also a Professor in the MeGill Chemistry Department, supervises graduate student work in polymer, surface and colloid chemistry with particular reference to those aspects that pertain to the physics and chemistry of pulp and paper. An Associate Professor of Chemical Engineering at McGill, who is a consultant to the Institute, directs graduate students in a variety of chemical studies. In addition, the Head of the Institute's Wood and Fibre Physics Division, who holds a teaching appointment in McGill's Department of Mechanical Engineering, supervises graduate student investigations on such subjects as supercalendering of paper and frictional processes in polymeric systems. Other staff members who hold concurrent honorary positions at McGill as Research Associates assist in this student program.

The Institute also undertakes contract research projects on a cost-reimbursement basis for individual companies or groups of companies in the pulp and paper or allied fields. The larger of these co-operative contracts have been concerned with problems of particular segments of the Canadian pulp and paper industry, such as the investigation into the causes of corrosion in alkaline pulping equipment and the study of the rapid deterioration of paper machine wires.

A further function of the Institute is to provide a broad range of technical information services to the industry and, to some extent, to other industries and the public. It maintains a specialized library for this purpose which stocks bibliographies, abstracts, translations and critical reviews for the use of the scientific staff and the industry.

## CHAPTER XIII.-MINES AND MINERALS

## CONSPECTUS

|  | Page |  | Pagr |
| :---: | :---: | :---: | :---: |
| Section 1. Canada's Mineral Indubtry, 1867-1967. | 536 | Subsection 1. Federal Government Aid. | 581 |
| Subsection 1. Metals...... . . | 554 | Subsection 2. Provincial Government Aid. | 586 |
| Subsection 2. Industrial Minerals. | 566 | Section 3. Mining Legislation | 590 |
| Subsection 3. Petroleum and Natural Gas. | 573 | Section 4. Indugtrial Statiettcs of the |  |
| Subsection 4. Coal. | 578 | Mineral Indurtry........ ....... .. | 582 |
| Section 2. Government Aid to the Mineral Indogtry....... | 581 | Section 5. World Prodtction of Certain Metallic Minerala and Fuels. | 594 |

The interpretation of the symbols used in the tables throughout the Year Book
will be found on p. viti of this volume.

## Section 1.-Canada's Mineral Industry, 1867-1967*

Canada's mineral industry takes pride in its record of growth and expansion over the past hundred years, although its history reaches back to the activities of the earliest explorers. Samuel de Champlain, early in the 17th century, discovered silver and copper in what is now Nova Scotia and, later in that century, in 1672, Nicholas Denys noted the existence of coal on Cape Breton Island. At about the same time, Sieur de la Portardière began the first examination of bog iron deposits in Canada in the St. Maurice Valley of Quebec. In the 18th century, exploration activity increased and a number of mining operations were undertaken-coal was produced in Cape Breton and iron ore for ironsmelting operations was produced in several communities of Quebec. However, it was not until the 19th century that development of Canada's mineral resources got under way on a significant scale and by the middle of the century there had been sufficient mineral activity to give promise of a major resource industry. With the founding of the Geological Survey of Canada in 1842 began the systematic examination of the country's mineral resources and since then the Survey's records and reports have served as important guides to prospectors and exploration companies in their search for new mineral deposits.

By the time of Confederation a number of discoveries had been made in Eastern Canada but the most spectacular was the discovery of gold in British Columbia in the 1850s. Although the gold rush on the Fraser and Thompson Rivers was relatively shortlived, thousands of people flocked into British Columbia in the 1850 s and the 1860 s as a direct result of gold-mining activity. Settlement, railway construction, agricultural expansion and growing industrialization have followed many other mineral discoveries. Reference to even one or two notable examples of mineral discoveries in each decade of the past century illustrates the importance of the mineral industry in the economic development of Canada. In the 1860 a thriving oil industry was established in southwestern Ontario, following an initial discovery near Petrolia in the late 1850s. Asbestos was

[^179]discovered in the Eastern Towaships of Quebec in 1877 and Canada has since been one of the world's leading asbestos producers. In 1883, nickel-copper ores were found at Sudbury in Ontario and Canada has since been the world's leading nickel producer and one of the major copper producers. A number of gold, silver and base metal discoveries were made in southern British Columbia in the 1890s, including the great Sullivan mine, following an initial copper-gold discovery at Rossland in 1889. In 1896, the famous Klondike discovery in the Yukon precipitated the world's most spectacular gold rush. At the turn of the century, northern Ontario was the focus of attention when silver ore was discovered at Cobalt. This was followed by the discovery of many other major mining areas including the Porcupine gold mining camp in 1909 and Kirkland Lake in 1911. While exploration was continuing in northern Ontario and Quebec, leading to the Noranda copper find in the Rouyn district in 1921, oil and gas exploration in Western Canada resulted in the discovery of the important Turner Valley field near Calgary in 1913. The introduction of aircraft in mineral exploration in Northern Canada in the 1920s was a key factor in the discovery of pitchblende, a source of radium and uranium, at Great Bear Lake in the Northwest Territories in 1930, and in the finding of a number of gold and base metal deposits in the northern areas of the provinces, the Northwest Territories and Yukon Territory in the 1930s. The Leduc oil discovery in Alberta in 1947 was the start of Canada's present-day oil industry, one of the moat thriving sectors of the mineral economy. Since the immediate postwar period, mineral discoveries have been made in almost every region of Canada and the industry's rapid growth and increasing diversification have had a profound effect on the Canadian economy.

The dynamic role of the mineral industry is evident from the fact that in 1867 the value of mineral production was well under 1 p.c. of the gross national product whereas it now accounts for over 7 p.c. Since 1867, the value of mineral production on a per-capita basis has risen from an estimated $\$ 1$ to almost $\$ 200$; this increase resulted from a growth of mineral production value from about $\$ 3,000,000$ to nearly $\$ 4,000,000,000$, an increase that greatly outpaced the country's population growth and industrial production as a whole. Mineral exports have increased in proportion to production and now account for almost one third of all of Canada's merchandise exports. The mineral industry's record of the past hundred years is indeed one of greatly increasing importance and Canada now ranks as the world's third largest diversified mineral producer following the United States and the Soviet Union.

The historical trend of the value of mineral production is shown in Table 1. Statistics are available from 1886 and are given for five-year intervals from that date to 1950 and annually for subsequent years. These figures are not strictly comparable throughout the period because of minor changes in methods of computing metallic content of ores sold and valuations of products but serve as a measure of the tremendous growth of this major industry.
1.-Value of Mineral Production, 1886-1985

| Year | Total Value | Value per Capita | Year | Total Value | Value per Capita | Year | Total Value | Value - per Capita |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ |  | \$ | 5 |  | \$ | \$ |
| 1886. | 10,221,255 | 2.23 | 1935. | 312,344,457 | 28.84 | 1957. | 2,190,322,392 | 131.87 |
| 1890 | 18,763,353 | 3.51 | 1940.. | 529,825,035 | 48.55 | 1958. | 2,100,739, 038 | 122.99 |
| 1895 | 20, 505,917 | 4.08 | 1945.. | 498,755,181 | 41.31 | 1959. | 2,409.020, 511 | 137.79 |
| 1900. | 64.420 .877 | 12.15 | 19501. | 1.045, 450, 073 | 76.24 | 1960 | 2,492,509,981 | 139.48 |
| 1995 | 69.078, 999 | 11.81 |  | 1,245,483, 595 | 88.90 | 1961. | 2,582,300,387 | 141.59 |
| 1910 | 106, 823,623 | 15.29 | 1952. | 1,285, 342+353 | 88.90 | 1962. | 2,850, 886,179 | 153.53 |
| 1915. | 137, 109,171 | 17.18 | 1953. | 1,336,303, 503 | 90.02 | 1963. | 3,050,428, 547 | 161.43 |
| 1925. | 227, 2589,665 | 26.63 24.38 | ${ }_{1955}^{1954}$ | 1,488,382, 091 | 97.36 +114.37 | 19 | 3,387,971,534 | 176.14 |
| 1930. | 279,873,578 | 27.42 | 1956. | 2,084,905, 554 | 129.65 | 19650 | 3,743,381,248 | 191.30 |

[^180]
## The Mineral Industry in 1965

The Canadian mineral industry in 1965 continued the strong advances in each of its three sectors-metallic minerals, industrial minerals and mineral fuels-that have been experienced since the slight decline in 1958. It was a good year that was characterized by growth of output both regionally and by commodity. Preparation for production was under way at several large mineral projects, commercial production commenced at some large projects and others were expanded, and a continuing high rate of success in the discovery of mineral deposits of economic importance was maintained.

Canada's mineral production had a value of $\$ 3,744,000,000$ in 1965 , almost double the 1956 value of $\$ 2,085,000,000$. The increase over 1964 of 10.5 p.c. was one of the largest percentage increases in recent years and the total value gain of $\$ 356,000,000$ was the third largest annual advance ever recorded. The metallics sector accounted for $\$ 229,000,000$ of this increase, the non-metallics, including structural materials, accounted for $\$ 46,000,000$ and the mineral fuels for $\$ 81,000,000$. The percentage contributions to total mineral output value of these three sectors were $51.5,19.5$ and 29.0 , respectively.

## 2.-Value of Mineral Production, by Class, 1956-65

| Year | Metallics | Nonmetallics | Fuels | Structural Materials | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | 8 | \$ | \% |
| 1956. | I, 146,349,595 | 160,341,599 | 518,761,191 | 259,453,169 | 2.084,905,554 |
| 1957. | 1,159,579,226 | 169,061, 110 | 564,776,791 | 296,905,265 | 2,190,322,392 |
| 1058. | 1,130,160,395 | 150,354,802 | 510,768,681 | 309,455,160 | 2,100,789,038 |
| 1959. | 1,370,648,535 | 178,216,641 | 535,577,823 | 324,577,512 | 2,409,020,511 |
| 1960. | 1,406,558,061 | 197,505,783 | 565,851,829 | 322,594,308 | 2,492,509,381 |
| 1961. | 1,387,159,036 | 210,467,786 | 653,327,802 | 331,345,763 | 2,582,300,387 |
| 1962. | 1,498,433, 050 | 217,453,009 | 780,932,387 | 356,166,883 | 2,850,986,179 |
| 1983. | 1,509,536,931 | 253,452,413 | 908,428,087 | 379,011,116 | 3,050,428,547 |
| 1964. | 1,701,648,538 | 284,497,000 | 998,767, 672 | 403,058,324 | 3,387,971,534 |
| 19650 | 1,930,231,456 | 310,827,059 | 1,079,737,806 | 423,185,127 | 3,743,881,248 |

The index of the volume of mineral production provides a means of measuring the mining industry's absolute growth and its comparative growth in the economy;* in 1965 it was $365.6(1949=100)$ compared with 211.3 for industrial production of the economy as a whole. The extent of the industry's growth is also evident from per capita comparisons (see Table 1); the per capita value of mineral output in 1965 was $\$ 191$, which was 2.9 times greater than the 1949 per capita, whereas the increase in the per capita value of the gross national product was 2.1 times in the same period. Net value criteria, which measure value added in the production process, also point to the dynamic role of mining in the Canadian economy; mining net value increase has been about double that of the economy as a whole since 1949 and, as a percentage of total primary industry net value, mining has risen from 20 p.c. to over 30 p.c. since 1949 whereas agriculture has declined from 60 p.c. to a little more than 40 p.c.

[^181]
## 3.-Quantity Indexes of Production of the Principal Mining Industries, 1056-65

(1849=100)
Nors.-Revised since publication in the 1986 Year Book.

${ }^{1}$ Based on commodity data. $\quad 2$ Production of the gold mining industry only.
4.-Quantity and Value of Mineral Produetion, 1964 and 1965

| Mineral |  | 1984 |  | 1965D |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Quantity | Value | Quantity | Value |
|  |  |  | \$ |  | * |
| Metallies.... | lb. | 1,591,523 | 1,701, 748,5388 | 1,232,665 |  |
| Bismuth.. |  | 1,591,583 | 810,623 | 1,513,213 | 1,551,610 |
| Cadmium |  | 2,772,984 | 8,981,467 | 3,009,447 | 8,366,283 |
| Calciurn. | " | 138,357 | -151,694 | 123,487 | 123,391 |
| Cobalt. |  | 3,184,983 | 3,990,973 | 3,798,740 | 8,205,278 |
| Columbium ( $\mathrm{Cb}_{2} \mathrm{O}_{5}$ ) | " | 2,163,359 | 2,282, 522 | 2,300,000 | 2,350,000 |
| Copper | " | 973,799,989 | 324,467,834 | 1,034,493,452 | 388,005,039 |
| Indium | oz.t. | 3,835,454 | 144,788,388 | 3,608,348 | 136,142,969 |
| Iron ore. |  | 38,325,822 | 401,951,696 | 39, 790,103 | 419,393, 058 |
| Iron, remelt |  | 429,383 | 18,700, 185 | 3688,000 | 16,596,380 |
| Lead. . . . | lb. | 407,433, 868 | 54,759,110 | 573,621,676 | 88,911,360 |
| Magreaium |  | 18,706,020 | 5,587,909 | 22,265,647 | 6,697,505 |
| Mercury... | " | 5,548 | 2, 22,848 | 1,520 | 13,249 |
| Molybdenum | " | 1,224.712 | 2,057, 383 | 9,691,220 | 16,759,950 |
| Nickel..... | ${ }^{\prime \prime}$ | 458,992,512 | 379,320,510 | 522,310,371 | 435,332, 054 |
| Platipum group | oz.t. | 376,238 | 25,404, 117 | 452,063 | 35,678,078 |
| Selenium. | lb. | 465, 748 | 2,258,868 | 504, 109 | 2, 435,704 |
| Silver,... | oz.t. | 29,902,611 | 41,863,655 | 32,964,299 | 46,117,054 |
| Thorium. |  | 77,782 | 505,583 | 86, 264 | 554,793 |
| Tin..... |  | 352, 350 | 533.572 | 409,106 | 810,030 |
| Tungsten ( $\mathrm{FO}_{3}$ ). | " |  |  |  |  |
| Uranium ( ${ }_{\text {U }} \mathrm{U}_{3} \mathrm{O}_{3}$ ) | " |  | 83,509,429 | 8,615,000 | 64,300,000 |
| Zinc.............. |  | 1,369,025,387 | 193,990,897 | 1,663,803,788 | 251,234,372 |
| Non-metallies. |  |  | 381,497,000 |  | 310,877,069 |
| Arsenious oxide. | ib. | 323,900 | 16,195 | 300,000 | 15,000 |
| Asbeatos. | ton | 1,419,85] | 145, 193, 443 | 1,380,210 | 139, 805,322 |
| Distomite. |  | 169,149 | 1,574,398 | 201,357 | 2.014. 859 |
| Distomite | ton | 1,143 | 64.555 | 1,200 | 65,000 |
| Feldspar. <br> Fluorspers | ton | 9.149 | 212,052 $2,258,796$ | 10,830 | 241,621 $2,546,419$ |
| Gem stones. | 1 b . | 11,537 | 13,804 | 11,000 | 2, 14,000 |
| Graphite... | tom |  | - | - |  |
| Grindstone. | " | $\stackrel{\rightharpoonup}{360,685}$ | 11,523,987 | 6, 210 960 ${ }^{9}$ | 11, $\begin{array}{r}1,800 \\ \hline 853\end{array}$ |
| Hehum. | Mef. | 6,360,685 | 11,523,987 | 6,210,960 | 11,438,353 |
| Iron oxides. | ton | 1, 1,033 | 79,250 | 235 | 22,325 |
| Lithia. ${ }^{\text {a }}$ |  | 1,056,408 | 1, 155,282 | 1,035,048 | 1,164,060 |
| Magnesitic dolomite and | ton | 1,198,162 | 8,569, 818 | 1,885,550 | \$,007, 241 |

4.-Quantity and Value of Mineral Production, 1964 and 1965-concluded

| Mineral | 1964 |  | 1965p |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Quantity | Value | Quantity | Value |
| Non-metallics-concluded |  | \$ |  | \$ |
| Nepheline syenite.................. ton | 290,300 | 3,097,172 | 328,813 | 3,548,947 |
|  | 255, 475 | 8 8,399,648 |  |  |
|  | 858,351 | 31,161,954 | 1,430,000 | $8,195,214$ $54,400,000$ |
| Pozzolan............................. " |  | 35,200 | 1,100,00 | 54, 35,000 |
| Pyrite, pyrrhotite..................... "̈ | 351,850 | 1,126,167 | 352,808 | 1,889,226 |
| Quartz.............................. "̈ | 2,117,273 | 4,506,038 | 2,381,555 | 4,943,639 |
| Salt.. | 3,988,598 | 20,203,742 | 4,331,100 | 21,564,734 |
| Soapstone and talc. ................... | 58,132 | 827,757 | 55,034 | 21,802,010 |
| Sodium sulphate.................... " | 333,263 | 5,222,313 | 346,000 | 5,590,312 |
| Sulphur, in smelter gas. . . . . . . . . . . . . | 443,448 | 4,261,912 | 513,122 | 5,055,120 |
| Sulphur, elemental. | 1,788,165 | 18,637,597 | 1,907,723 | 23,481,947 |
| Titanium dioxide, etc................. |  | 21,270,144 |  | 19,955, 350 |
| Fuels. |  | 998,767,672 |  | 1,079,737,606 |
| Coal............................. ton | 11,319,323 | 72,735,085 | 11,425,000 | 71,645,000 |
| Natural gas......................... Mcf. | 1,407,097,508 | 172,966,859 | 1,470,083,455 | 197, 296,911 |
| Natural gas by-products............. bbl. |  | 78,689, 000 |  | 92,547,454 |
| Petroleum, crude..................... " | 274,626,385 | 674,376,728 | 293,571,941 | 718,248,241 |
| Structural Materials..................... | ... | 403,058,324 | $\cdots$ | 423,185,127 |
| Clay products (brick, tile, etc.)... |  | 40,830,585 |  | 43, 205, 829 |
| Cement............................. ton | 7,847,384 | 130,704, 220 | $8,426,971$ | 144,582,127 |
| Lime................................ " | 1,540,727 | 19,408,704 | 1,516,983 | 17,730,045 |
| Sand and gravel | 193,791,358 | 125, 232, 132 | 192,857,375 | 129,329,647 |
| Stone. | 69,794,358 | 86,882,683 | 69,156,175 | 88,337,479 |
| Grand Totals | ... | 3,387,971,534 | ... | 3,743,981,248 |

## 5.-Percentage of the Total Value Contributed by Principal Minerals, 1956-65

| Mineral | 1956 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 | 1963 | 1964 | 1965p |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | p.c. | p.c. | p.c. | p.c. | p.c. | p.c. | p.c. | p.c. | p.c. | p.c. |
| Metallies ${ }^{1}$ | 55.0 | 52.9 | 53.8 | 56.9 | 56.5 | 53.7 | 52.5 | 49.5 | 50.2 | 51.6 |
| Copper | 14.1 | 9.4 | 8.3 | 9.7 | 10.6 | 9.9 | 9.9 | 9.3 | 9.6 | 10.4 |
| Gold. | 7.2 | 6.8 | 7.4 | 6.2 | 6.3 | 6.1 | 5.5 | 5.0 | 4.3 | 3.6 |
| Iron ore | 7.7 | 7.6 | 6.0 | 8.0 | 7.0 | 7.3 | 9.2 | 10.3 | 11.9 | 11.2 |
| Lead. | 2.8 | 2.3 | 2.0 | 1.6 | 1.8 | 1.8 | 1.5 | 1.5 | 1.6 | 2.4 |
| Nickel. | 10.7 | 11.8 | 9.2 | 10.7 | 11.9 | 13.6 | 13.5 | 11.8 | 11.2 | 11.6 |
| Platinum group | 1.1 | 1.2 | 0.7 | 0.7 | 1.2 | 0.9 | 1.0 | 0.7 | 0.7 | 0.9 |
| Silver. | 1.2 | 1.1 | 1.3 | 1.2 | 1.2 | 1.1 | 1.2 | 1.4 | 1.2 | 1.2 |
| Uranium | 2.2 | 6.2 | 13.3 | 13.7 | 10.8 | 7.6 | 5.5 | 4.5 | 2.5 | 1.7 |
| Zinc. | 6.0 | 4.6 | 4.4 | 4.0 | 4.4 | 4.1 | 3.9 | 4.0 | 5.7 | 6.7 |
| Non-metallics ${ }^{\text {. }}$ | 7.7 | 7.7 | 7.2 | 7.4 | 7.9 | 8.2 | 7.6 | 8.3 | 8.4 | 8.3 |
| Asbestos | 4.8 | 4.8 | 4.4 | 4.5 | 4.9 | 5.0 | 4.6 | 4.5 | 4.3 | 3.7 |
| Gypsum | 0.3 | 0.4 | 0.2 | 0.3 | 0.4 | 0.3 | 0.3 | 0.4 | 0.3 | 0.3 |
| Potash. | - | - |  | 0.1 | $\cdots$ | 0. | 0.1 | 0.7 | 0.9 | 1.4 |
| Quartz | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Salt. | 0.6 | 0.6 | 0.7 | 0.7 | 0.8 | 0.8 | 0.8 | 0.7 | 0.6 | 0.6 |
| Sodium sulphate | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.2 | 0.1 |
| Sulphur in smelter ga | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | ${ }_{0}^{0.6}$ |
| Sulphur, elemental.... |  |  | 0.1 0.3 | 0.1 0.4 | 0.2 0.5 | 0.3 0.6 | 0.3 0.4 | 0.4 0.5 | 0.6 0.6 | 0.5 |
| Titanium dioxide, etc. | 0.4 | 0.4 | 0.3 | 0.4 | 0.5 | 0.6 | 0.4 | 0.5 |  |  |
| Fuels | 24.9 | 25.8 | 24.3 | 22.2 | 22.71 | $25.3^{1}$ | $27.4{ }^{1}$ | $29.8{ }^{1}$ | 29.5 | 28.8 |
| Coal. | 4.6 | 4.1 | 3.8 | 3.1 | 3.0 | 2.7 | 2.4 | 2.4 | 2.1 | 1.9 |
| Natural gas | 0.8 | 1.0 | 1.5 | 1.6 | 2.1 | 2.6 | 3.8 | 4.9 | 5.1 | - 5 |
| Petroleum. | 19.5 | 20.7 | 19.0 | 17.5 | 17.0 | 18.9 | 19.4 | 20.2 | 19.9 | 19.2 |
| Structural Materials | 12.4 | 13.6 | 14.7 | 13.5 | 12.9 | 12.8 | 12.5 | 12.4 | 11.9 | 11.3 |
| Clay product | 1.8 | 1.6 | 2.0 | 1.8 | 1.5 | 1.4 | 1.3 | 1.3 | 1.2 | 1.2 |
| Cement. | 3.6 | 4.3 | 4.6 | 4.0 | 3.7 | 4.0 | 4.0 | 3.9 | 3.9 | 3.9 |
| Lime | 0.8 | 0.8 | 0.9 | 0.9 | 0.8 | 0.7 | 0.6 | 0.6 4.0 | 0.6 3.7 | 3.4 |
| Sand and gra | 3.9 | 4.2 | 4.6 | 4.3 2.5 | 4.5 2.4 | 4.1 2.6 | 4.2 2.4 | 4.0 2.6 | 3.5 | 2.3 |
| Stone. | 2.3 | 2.7 | 2.6 | 2.5 | 2.4 | 2.6 |  |  |  |  |
| Grand Totals. . | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

[^182]Mineral production was recorded for 63 mineral commodities in 1965, the leaders being crude oil, nickel, iron ore, copper, zinc, natural gas, cement, asbestos, gold and sand and gravel. These 10 commodities accounted for 79 p.c. of the industry's output. Notwithstanding this, there were important gains for several other minerals-notably natural gas by-products, molybdenum, potash and elemental sulphur-indicative of growing mineral diversification. There is also increasing regional diversification caused by greater mineral industry activity throughout the country, resulting in particularly marked gains in British Columbia, New Brunswick and Newfoundland, and in appreciable increases in all other provinces except Nova Scotia where the decline of the coal industry is having an adverse effect. Canada's land area of $3,600,000 \mathrm{sq}$. miles and extensive offshore areas provide great scope for continuing discovery and expansion. This tread to diversification is also evident from the output increases for most of the minerals produced and from the fact that Central Canada-Ontario and Quebec-now accounts for 45 p.c. of the country's output compared with close to 62 p.e. at the end of World War II.

The Canadian mineral industry is strongly export-oriented and, consequently, production increases are determined in considerable part by progress in export markets. The metallic mineral sector, in general, is an export industry, close to four fifths of its output being exported. Exports of all mineral materials in crude and fabricated forms in 1965 totalled $\$ 2,782,000,000$. The mineral industry is the country's leading export industry and for several years has been accounting for close to one third of the value of all merchandise exports. In 1965, the United States took 59 p.e. of Canada's mineral exports, Britain took 19 p.c., the European Common Market 8 p.c. and Japan 4 p.c.; the remaining 10 p.c. had a world-wide distribution.

Mineral industry growth is greatly dependent on continuing large-scale investment for resource development and plant expansion. Capital and repair expenditures in mining, quarrying and oil wells in 1965 amounted to $\$ 881,000,000,9$ p.c. greater than in 1964. The forecast for 1966 is $\$ 1,132,000,000$, an increase of 28 p.c. over 1965 and a dramatic indication of the scale of expansion now under way in the industry.

Associated with mineral production growth and capital investment, there has been continuing progress in mining technology. Highly competitive world markets, rising labour and material costs, shortages of workers, and the opening up of more remote mineral properties have all contributed to the drive toward lower costs and greater efficiency in mining operations. In striving to be more competitive, the Canadian mineral industry has begun to increase its investment in research and to turn its attention to the problem of the shortage of engineers and scientists in the industry. As a result, research establishments are being enlarged and an active campaign is under way to encourage more young people to take university or technical school training in preparation for scientific, engineering and technical work in the Canadian mineral industry. Many companies have reported recent advances in mining procedures in Canadian mines that are resulting in greater efficiency.

The relatively high increase in value of metallics output in 1965 was the result of both price and quantity factors. Prices for the major base metals were firm and in some cases higher. Output of iron ore and base metals was high as new facilities commenced production and some existing facilities were expanded. Marked advances were made in lead with a gain in output value of about 62 p.c., in zinc of nearly 30 p.c., nickel 15 p.c. and copper of nearly 20 p.c. Nickel regained first place from iron ore as Canada's leading metallic mineral. Several copper, copper-zinc and copper-nickel mines commenced production in 1965 and others were being developed or planned for production in the next few years. The year heralded Canada's emergence as a major molybdenum-producing country, surpassed only by the United States and probably the Soviet Union. There was
higher output of a number of other metals that are recovered mainly as by-products of base metal operations. Output of gold and uranium declined from 1964, a trend that has been in evidence for several years.

The outstanding development in the industrial mineral sector of the industry again was related to production gains and announced mine development plans for potash production in Saskatchewan. Three companies contributed to 1965 output and development programs were under way that will add six new producers by 1968 . It is widely acknowledged that potash reserves in Western Canada are the largest and of the highest grade in the world and by far the most economically attractive of any known deposits. Asbestos output, following five successive years of production records, declined slightly from 1964 but the value of shipments of elemental sulphur recovered from the processing of natural gas set, a new record. The continuing high production of structural materials, which with nonmetallics comprise the industrial minerals sector, kept pace with the high rate of all types of construction. Production of mineral fuels, embracing crude petroleum, natural gas, natural gas liquids and coal, reached its highest point in 1965, all items except coal setting new records.

## Provincial and Territorial Mineral Production in 1965

Ontario is Canada's leading mineral-producing province, its 1965 output, valued at $\$ 986,000,000$, being 26.3 p.c. of the total for the country. Following in order were Alberta with 21.4 p.c., Quebec with 18.8 p.c., Saskatchewan with 8.7 p.c., British Columbia with 7.6 p.c., Newfoundland (incl. Labrador) with 5.9 p.c., and Manitoba with 4.9 p.c. It should be noted, however, that Ontario's percentage position of mineral output to total output continued to decline although it still maintained a substantial lead over that of Alberta, which in 1961 had displaced Quebee in second position. All provinces increased their mineral output value in 1965, Ontario, Alberta and Newfoundland showing the largest absolute gains.

## 6.-Value of Mineral Production, by Province, 1956-65

Nots.-Figures from 1899 are given in the corresponding table of previous Year Books beginning with the 1933 edition.

| Year | Newfoundland (incl. Labrador) | Prince Edward Island | Nove Scotia | New <br> Brunswick | Quebec | Ontario | Manitoba |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 8 | \$ | \$ | \$ | $\$$ | \$ | \$ |
| 1956. | 84,349,006 | - | 66,092,274 | 18,258,302 | 422,464,410 | 650,823,362 | 67,909,407 |
| 1957 | 82,682,263 | - | 68,058,743 | 23,120,689 | 406,055,757 | 748,824,322 | B3, 464,285 |
| 1958. | 64,994,754 | - | 62,706,891 | 16,275,971 | 365,706,489 | 789,601,868 | 57,217,569 |
| 1959. | 72, 156,996 | 4,559,171 | 62,879,647 | 18, 133,290 | 440,897,186 | 970,762,201 | 56,512,410 |
| 1960. | 80,637,123 | 1,172,587 | $65,453,531$ | 17,072,738 | 446,202,726 | 983,104,412 | 58,702,697 |
| 1961. | 91,618,709 | 606,644 | 61,693,156 | 18,804,385 | 455,522, 933 | 943,669,456 | 101,489,787 |
| 1962. | 101, 858,960 | 677,006 | 61, 651,083 | 21,811,575 | 519,453,166 | 913,342, 174 | 158,932,169 |
| 1963. | 127,796,707 | 798,345 | 66,317,617 | 28,343,419 | 540,615,068 | 873,828,297 | 169,638,539 |
| 1964. | 182,152,656 | 831,283 | 66,073,596 | 48,676,712 | 684,583,430 | 901,582,694 | 173,872,570 |
| 1965P. | 220,483,234 | 885,171 | 66,633,831 | 83, 944, 030 | 704,704,474 | 986,183,278 | 182,010,655 |

6.-Value of Mineral Production, by Province, 1956-65-concluded

| Year | Saskatchewan | Alberta | British Columbia | Yukon Territory | Northwest Territories | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ | \$ | \$ |
| 1950. | 122, 744,698 | 411, 171, 898 | 203,277, 828 | 15,656,434 | 22,157,935 | 2,084,905,554 |
| 1957. | 173,461,037 | 410,211,763 | 178,921,120 | 14, 111,798 | 21,400,615 | 2,190,322,392 |
| 1958. | 209,940,966 | 345,939,248 | [51, 149, 136 | 12,310,756 | 24,895,300 | 2,100,739,038 |
| 1959. | 210,042,051 | 376,215,593 | 159, 395,092 | 12,592,378 | 25, 874,406 | 2,409,020,511 |
| 1960. | 212,093,225 | 395,344,010 | 186,281,646 | 13,330, 198 | 27,135,687 | 2,492,509,981 |
| 1981. | 215,077,233 | 473,480,540 | 188,542,078 | 12,750,304 | 18,145,162 | 2,882,300, 387 |
| 1962. | 240,653,502 | 566,502,703 | 235,428, 135 | 13,137,730 | 17,537,036 | 2,850,986,179 |
| 1963. | 272,355,007 | 668,311,368 | 261,146,081 | 14,366,936 | 15,911, 163 | 3,050,428,547 |
| 1064. | 292,373,974 | 735, 896,463 | 268,659,305 | 15.204, 103 | 18,064,742 | 3,387,971,534 |
| 1965\%. | 327,326, 166 | 799,344,875 | 280,161,580 | 13,341,266 | 72,862,708 | 3,743,981,248 |

## 7.-Value of Metallics, Non-metallics, Fuels and Structural Materials Produced, by Province, 1964 and 1965

| Year and Province or Territory | Metallies | Nonmetalises | Fuels | Structural Materials | Totals |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \% | \% | \$ | \$ |
| 1064 |  |  |  |  |  |
| Newioundland (incl. Labrador) | 166,169, 266 | 9,995,362 | - | 5,988,028 | 182,152,656 |
| Prince Edward Island. . . . . Nor |  |  |  | 831,283 | 831,283 |
| Nova Scotia, | 1,517.490 | 14,581,437 | 42,827,589 | 7,147,080 | 66,073,596 |
| Quebec.... | 407 | 158,99, ${ }^{1,512}$ | 8,573,688 | 119,205, ${ }^{798}$ | 48,676, 712 |
| Ontario | 701,272,213 | -21,472,923 | 9,774,192 | 169.063, 366 | 901, 882,694 |
| Manitoba | 143,166,538 | 2,967,919 | 10,296,549 | 17,441,570 | 173,872,576 |
| Saskatchewan. | 44, 827, 103 | 38,201,998 | 196,510,552 | 12,834, 321 | 292, 733,974 |
| Alberta | 2,233 | 18.621,938 | 684,302, 726 | 32,969, 566 | 735, 896, 463 |
| British Columbis | 175, 104, 184 | 19,401,496 | 45,931,273 | 28,222,352 | 268,659,305 |
| Yukon Territory. | 15, 105,953 | 19, | 98,150 | - | 15,204, 103 |
| Northwest Territorie | 17,611,789 | $\cdots$ | 452,953 | - | 18,064, 742 |
| Canada. | 1,701,648,538 | 284, 497,000 | 998,767,672 | 403,458,324 | 3,387,971,584 |
| 1965p |  |  |  |  |  |
| Newtoundland (incl. Labrador) Prince Edward Ialand | 203, 144,608 | 11, 120, 550 | 二 | B. 218,076 | 220, 4883,234 |
| Nova Scotia. . . . . . | 1, 316,562 | 14, 667,753 | 41,950,000 | 8,699,516 | $66,633,831$ |
| New Brunewick | 64,974,028 | 1,551,001 | 8,410,570 | 9,008,43] | 83,944,030 |
| Quebec. | 432,334,881 | 151,985,508 |  | 120,434,085 | 704,704,474 |
| Ontario | 780,680, 289 | $20+810.763$ | 9,749,340 | 174,942,886 | 986,183,278 |
| Manitoba | 149,233,043 | 2,790. 304 | 11.661.993 | 18,325,315 | 182,010,655 |
| Baskatchew | 41,584, 473 | 62,446, 111 | 210,711, 962 | 12,583,620 | 327.326, 168 |
| Alberta. | 7,004 | 22,701,558 | 742,073, 712 | 34,562,601 | 799,344, 875 |
| British Columbi | 171,353, 841 | 22,803,511 | 54, 578,782 | 37, 425 , 426 | 286, 161,560 |
| Yukon Territory... | 13,231,266 | - | 110,000 |  | 13,341, 268 |
| Northwest Territories. | 72,371,461 | - | 491,247 | - | 72,862,708 |
| Canada. | 1,930,231,456 | 310,827,059 | 1,079,737,606 | 423,185,127 | 3,743,981,248 |



## Newfoundland (incl.

 Labrador). -The mineral output of the Province of Newfoundland (incl. Labrador) has grown rapidly in the past few years, iron ore production from Labrador being by far the main contributor. All metallics produced in the province in 1965 had a value of $\$ 203,100,000$, of which iron ore production of $14,600,000$ tons accounted for $\$ 168,500,000$. Outputs of copper, zinc and lead, mainly from the Buchans Mine near St. John's, were valued at $\$ 13,000,000, \$ 11,200,000$ and $\$ 7,200,000$, respectively One new copper mine commenced production during the year and another was under development for production in 1966. Wabush Mines started shipments of concentrates from its 5,300,000-ton-a-year facility at Wabush in Labrador, of which $4,900,000$ tons a year is pelletized at the plant of Arnaud Pellets, an associated company, at Pointe Noire, Que. Iron Ore Company of Canada, Limited, produces about 6,000,000 tons of concentrate a year at its Carol operations near Labrador City and pelletizes about $5,000,000$ tons a year at the nearby plant of Carol Pellet Company, an associated company; the remainder is shipped as concentrates. Capacity of the pellet plant will be increased to $10,000,000$ tons a year in 1966. It seems almost certain that growth in the value of mineral output in the province will depend almost entirely on iron-ore-industry growth. However, the potential of the Island for discovery and development of base metal properties is high, even though present operators are mining long-known deposits.The value of industrial minerals produced in 1965 was $\$ 17,300,000$ compared with $\$ 16,000,000$ in 1964 , asbestos contributing nearly $\$ 7,000,000$ and structural materials $\$ 6,200,000$.

Prince Edward Island and Nova Scotia.-Prince Edward Island's mineral industry is confined to the production of structural materials, which in 1965 were valued at nearly $\$ 1,000,000$.

Nova Scotia has shown the least change in total value of mineral output of all provinces over the past 15 years. Its main contribution to the Canadian mineral industry is in the output of coal, which in 1965 amounted to $4,100,000$ tons worth $\$ 42,000,000$, and in the output of non-metallics which were valued at $\$ 14,700,000$, with gypsum, salt and barite being the main contributors. The coal industry continues to operate only with difficulty,
despite the rising financial assistance under the long-standing federal coal subvention policy. Some encouragement has been recently obtained in the search for base metal deposits and a study has been undertaken to evaluate the possibility of finding potash in commercial quantities.

New Brunswick.-Only in recent years has mineral production in New Brunswick begun to grow and to become of significance in the province's economic picture. The discovery of large zinc-lead-copper-silver deposits near Bathurst and the beginning of production from them in 1963 has raised New Brunswick's base metal output to $\$ 65,000,000$ in 1965. Brunswick Mining and Smelting Company Limited is enlarging its base metal operations to the west of Bathurst, raising mill capacity to 6,000 tons a day from 4,500 tons a day, and is developing its No. 6 mine for production in 1966; an associated company is building a zinc-lead blast furnace at Belledune Point, about 25 miles north of Bathurst. Heath Steele Mines Limited and Cominco Limited produce base metal concentrates. Several companies are exploring and developing base metal properties and studying production plans. Zinc production was valued at $\$ 39,000,000$ in 1965 compared with $\$ 15,400,000$ the previous year and lead, copper and silver outputs were valued at $\$ 14,400,000, \$ 7,300,000$ and $\$ 4,100,000$, respectively. The $\$ 125,000,000$ base metal-chemical-steel-fertilizer facilities being developed by Brunswick Mining and Smelting will provide a strong base for further industrial development that will contribute greatly to the province's economic growth.


Quebec.-The Province of Quebec is second to Ontario in value of metallic output, which totalled $\$ 432,300,000$ in 1965 compared with $\$ 407,200,000$ in 1964 . Quebec led all provinces in iron ore production at $14,800,000$ tons but was second to Newfoundland in value of iron ore output at $\$ 141,600,000$. Copper production at $352,000,000 \mathrm{lb}$. worth $\$ 132,000,000$ was higher than in 1964 as was zinc output at $552,000,000 \mathrm{lb}$. valued at

$\$ 83,300,000$. There was considerable activity in base metal exploration and development in the province during 1965, particularly in the northwest and Gaspe areas. Mine development and plant construction programs under way indicate that production of copper and zinc should increase appreciably in the next few years; one copper mine commenced production in 1965 in the Eastern Townships and a second, north of Amos, started production and mill tune-up late in the year. The Fyre Lake iron orebody, about 60 miles north of Lac Jeannine, will be developed to supplement production of the $9,000,000$ tons of concentrate a year from the Lac Jeannine facility.

Quebec leads all provinces in the production of non-metallics, which in 1965 were valued at $\$ 151,900,000$, asbestos contributing $\$ 119,000,000$ of the total. After five successive annual production records there was a decline in Quebec and Canadian asbestos production. Plans were announced in 1965 for the development of the Asbestos Hill deposit in far northern Ungava at an estimated cost of $\$ 90,000,000$, with production scheduled for 1968.

Output of titanium dioxide slag was valued at $\$ 20,000,000$ compared with $\$ 21,300,000$ in 1964. It, along with remelt iron, which was valued at $\$ 16,600,000$ in 1965 , is produced by the electric smelting of ilmenite at Sorel, the largest facility of its kind in the world.

Ontario.-Ontario's mineral production in 1965 at $\$ 986,200,000$ led all provinces. Metallics, at $\$ 780,700,000$, accounted for 79 p.c. of the total and nickel's contribution of $\$ 319,800,000$ accounted for 41 p.c. of the metallics' value. In an account of progress of the mineral industry, particularly for Ontario, that of nickel is outstanding. International Nickel and Falconbridge Nickel Mines Limited, first and second among world producers, have expansion programs under way that will maintain and probably improve their positions as world leaders. World nickel consumption in 1965 was higher than the $640,000,000$ lb. consumed in 1964; the United States, consumer of about one half of the nickel used in the western world, reported that consumption in the first half of the year was 27 p.c. higher than in the same period of 1964. The increase in nickel production in the Sudbury area was accompanied by an increase in copper production, which for the province totalled $438,000,000 \mathrm{lb}$. compared with $396,000,000 \mathrm{lb}$. in 1964 . Probably the major development in the province outside the Sudbury area was the preparation for production in late 1966 of the copper-zinc-silver orebody, near Timmins, of the Texas Gulf Sulphur Company, at an initial daily rate of 6,000 tons of ore.

Production of iron ore at $8,300,000$ tons valued at $\$ 90,600,000$ was slightly higher in quantity and value than in 1964. A new iron ore pellet plant near Kirkland Lake started regular shipments early in the year from its $1,250,000$-ton-a-year facility and a new pellet plant in the Atikokan area started shipments about mid-year. Another company was constructing facilities in the Timagami area that will have a pellet capacity of $1,500,000$ tons a year and two other companies were considering production of pellets from properties in northwestern Ontario.

Structural materials output in 1965 valued at $\$ 175,000,000$ compared favourably with \$169,000,000 in 1964 and gives every indication of a continuing high rate to meet requirements of all types
 of construction.

Notwithstanding reduced output of uranium and gold, Ontario's mineral production is expected to grow at an accelerated rate in the years ahead, with considerably higher output of nickel, copper and iron ore. Many by-product metals are recovered from the processing of nickel-copper and copper-zinc production, the most common being platinumgroup metals, gold, silver and cobalt.

Manitoba.-Nickel, copper and zinc accounted for about 78 p.c. of Manitoba's value of mineral output in 1965 , nickel accounting for $\$ 106,800,000$ of the $\$ 182,000,000$ total. International Nickel operates the world's only integrated nickel-production facility at Thompson-mine, concentrator, smelter and refinery-and is developing the Birchtree and Soab mines for production in 1968. Sherritt Gordon operates a nickel-copper mine at Lynn Lake and ships concentrates to its chemical refinery at Fort Saskatchewan in Alberta for recovery of nickel, copper and cobalt. The company started sinking a five-compartment shaft at a copper-zinc deposit south of Lynn Lake for an underground exploration and development program. Hudson Bay Mining and Smelting continued development of its Osborne and Anderson Lake copper-zinc mines near Snow Lake; it operates four mines in Manitoba and the Flin Flon mine that straddles the Saskatchewan border, all concentrates from which are smelted at Flin Flon. Production of structural materials at $\$ 18,300,000$, mineral fuels at $\$ 11,700,000$ and non-metallics at $\$ 2,800,000$ together constituted 18 p.c. of the province's mineral output in 1965.

Saskatchewan.-Attention in Saskatchewan in 1965 was again focused on the increased production of the potash development programs. Three companies produced $1,430,000$ tons of potash worth $\$ 54,400,000$ compared with 858,351 tons worth $\$ 31,200,000$
in 1964. Mine development programs under way or announced will add six new producers by 1968 and will place Canada in first position among world producers of this necessary fertilizer ingredient. World potash production capacity in 1965 was an estimated $12,400,000$ tons of $\mathrm{K}_{2} \mathrm{O}$; it is expected that Canadian productive capacity in 1968 will be between $6,000,000$ and $7,000,000$ tons a year.

Total value of mineral output was $\$ 327,300,000$ to which mineral fuels contributed $\$ 210,700,000$, non-metallics $\$ 62,400,000$ and metallics $\$ 41,600,000$. Uranium ( $\mathrm{U}_{3} \mathrm{O}_{8}$ ), copper and zinc were the leading metallic minerals. Crude petroleum production at $87,600,000 \mathrm{bbl}$. was valued at $\$ 200,400,000$, a new record. There is every indication that crude oil and potash together will produce an increasing percentage of the province's mineral output.


Alberta.-Crude oil, natural gas and natural gas by-products are by far the major components of Alberta's mineral industry, which recorded a total output value of $\$ 799,300,000$ in 1965 compared with $\$ 735,900,000$ in the previous year. The three commodities contributed 91 p.c. of the total, crude oil accounting for $\$ 474,000,000$, natural gas for $\$ 169,400,000$ and natural gas by-products for $\$ 86,900,000$. The development of Alberta's oil and gas resources and markets continued to meet with success. A major oil resource was being opened up in the Rainbow Lake area in the northwestern part of the province. Exploration and development drilling reached an all-time high of $10,200,000$ feet compared with the record of $10,334,000$ feet set in 1964. Recovery of elemental sulphur from the processing of natural gas was worth $\$ 20,700,000$ compared with $\$ 16,800,000$ the previous year and production accounted for an estimated $1,650,000$ tons of Canada's $1,908,000$ tons. Canada is second only to the United States as a world producer of elemental sulphur as a result of the large-scale development of natural gas resources.

British Columbia.-Mineral production in British Columbia reached \$286,200,000 in 1965, 6.5 p.c. above the previous year's total. Metallics output was valued at $\$ 171,400,000$, mineral fuels at $\$ 54,600,000$ and structural materials at $\$ 37,400,000$. The year was highlighted by developments in the non-ferrous sector. Plans for development
of large-tonnage copper operations were announced and the molybdenum industry showed strong advances. Copper production was down to $88,000,000 \mathrm{lb}$. from 115 ,$000,000 \mathrm{lb}$. in 1964 but this situation will reverse itself when new mines reach production. The province was heralded as a major molybdenum producer with three mines in operation and another being developed for production in 1966. With an output of $321,000,000 \mathrm{lb}$. of zinc and $242,000,000 \mathrm{lb}$. of lead, the province remains far in front of all the provinces in these important export commodities. Five iron ore pro-
 ducers shipped a record $2,100,000$ tons of iron ore valued at $\$ 18,800,000$, nearly all of which was exported to Japan; another producer starting operations in 1966 will have an annual iron ore production capacity of over 900,000 tons and will recover copper as a by-product. Exploration for base metal properties was widespread throughout the province and encouraging results were obtained by diamond drill exploration of large-tonnage, low-grade copper deposits east of the Alaskan Panhandle and north of Stewart, in north-central British Columbia and in the Highland Valley area.

Asbestos production valued at $\$ 13,700,000$ accounted for about 10 p.c. of Canada's total and for about 60 p.c. of the province's output of non-metallics. Outputs of crude petroleum, natural gas and natural gas by-products were at all-time highs with values of $\$ 27,200,000, \$ 17,900,000$ and $\$ 3,400,000$, respectively.

Yukon Territory and Northwest Territories.-In the Yukon Territory, mineral output was valued at $\$ 13,300,000$, of which $\$ 13,200,000$ was metallic production; silver, lead, zinc and gold, in that order, accounted for nearly all of it. Of significance to future mineral output in the Yukon were the announcements that the Clinton Creek asbestos deposit, about 40 miles north and west of Dawson, would be developed for production; that New Imperial Mines Limited may begin production of copper from its property southwest of Whitehorse; and that substantial lead-zinc resources had been encountered in exploration of the Vangorda area near the British Columbia border.

Metallic mineral output of the Northwest Territories was valued at $\$ 72,400,000$ with zinc, lead and gold contributing $\$ 28,300,000, \$ 24,300,000$ and $\$ 17,000,000$, respectively. Regular shipments of lead-zinc ore were begun by Pine Point Mines Limited from highgrade deposits on the south shore of Great Slave Lake; trial shipments had been made late in 1964. Production of lead and zinc will increase substantially in 1966 with shipments of high-grade ore continuing and regular shipments of concentrate beginning from the 6,000 -ton-a-day concentrator that started up late in 1965. Several other companies with property in the immediate Pine Point area received substantial encouragement in diamond drilling for lead-zinc deposits.


## Mineral Industry Outlook

Canada is the world's leading producer of nickel, zinc and asbestos; the second largest producer of gold, uranium, molybdenum, gypsum, selenium, sulphur and titanium; the third largest producer of iron ore, aluminum metal, cobalt, platinum metals and tellurium; fourth largest of lead, silver and magnesium; fifth largest of copper and barite; and in the over-all record ranks high for a number of other mineral commodities. The industry's output value has increased at an average annual rate of 7.6 p.c. during the past ten years and the outlook is for a continuing advance at least at this rate. Fortunately, the industry has only a few mineral commodity problems: a declining gold industry due to a cost-price squeeze, an ailing coal industry due to loss of markets and some high-cost mines, and a temporarily stagnant uranium industry awaiting new market growth. There is also a labour shortage problem which will be receiving attention in the administration of the Federal Government's new manpower policy. Possibly the most favourable current development is the intensity of mineral exploration throughout the country.

Canada has many competitors in the field of international mineral trade particularly in iron ore, copper, zinc, lead and crude petroleum (see pp. 594-596). There is no world scarcity of mineral raw materials and developments throughout the world in the past few years indicate that competition for mineral and metal markets will become even more severe. Although Canada is faced with increasing competition, it is very encouraging to note that major mineral discoveries are being made in this country each year in both long-established mining areas and in more remote locations. In addition, many smaller but still very important operations are being brought into production and others are being expanded. Thus, the value of Canada's mineral production will almost certainly exceed $\$ 4,000,000,000$ in 1967.

8．－Detalled Mineral Production，by Province，1964 with Preliminary Totals for 1965

| Mineral | $\begin{aligned} & \text { New- } \\ & \text { foundland } \\ & \text { (incl } \\ & \text { Labrador) } \end{aligned}$ | Nova Scotia | New Bruns－ wick | Quebec | Ontario | Manitoba | Saskat－ chewan | Alberta | British Columbia | $\left\lvert\, \begin{array}{c\|} \text { Yukon } \\ \text { Territory } \end{array}\right.$ | North－ west Terri－ tories | Canada |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |  |  |  | 1964 | 1965p |
| Metallics．．${ }^{\text {\％}}$ | 166，169，266 | 1，517，490 | 29，648，079 | 407，223，690 | 701，272，213 | 143，166，538 | 44，827，103 | 2，233 | 175，104，184 | 15，105，953 | 17，611，789 | 1，701，648，538 | 1，930，231，456 |
| Antimony 1 lb ： | － |  |  |  |  | 二 | 二 |  | $1,591,523$ 700,270 |  |  | $1,591,523$ 700,270 | $1,232,665$ |
|  | － | － | － | $\overline{185}$ |  | － |  |  | 213，428 |  |  | 399，958 | 653，312 |
| Bismuth．．．1b ${ }^{\text {d }}$ | 二 | 二 | 二 | 335，712 | 703 | － | － | 二 | 480,213$1,864,255$ | － | － |  | $1,551,616$ |
| Cadmium．lb． | － |  | 22，859 | 236,487 | 187，609 | 206，818 | 122，734 | 二 |  | $\overline{132}, 222$ | － | 816,628 $2,772,984$ |  |
|  |  |  | 74，063 | 766，218 | 607， 853 | 670，090 | 397，658 | 二 | 6，040，186 | 428，399 | － | $\begin{array}{r}2,772,984 \\ 8,984,467 \\ \hline\end{array}$ | $3,009,447$ $8,366,263$ |
| Calcium．．．lb． |  | － | － | － | ${ }_{151,694}$ | － |  | 二 | － |  | 二 | 138，357 | $\begin{array}{r} 123,487 \\ 123 \\ \hline 189 \end{array}$ |
| Cobalt |  |  | － | 86，091 | 2，212，016 | 886， 876 |  |  |  | － | － | 3，184，983 | 3，798，740 |
|  |  |  |  | 185，957 | 4，259，215 | 1，545，801 |  |  |  |  | － | 5，990，973 | $8,205,278$ |
| Columbiumlb． |  |  |  | $2,163,359$ |  |  | － | 二 |  | － |  |  | $2,300,000$$2,350,000$ |
| ${ }_{\text {Copper }}^{\left(\mathrm{Cb}_{2} \mathrm{O}_{6} .1 .1 \mathrm{lb}\right.}$ | 27，230，577 | 407，410 | 18，592，024 | $2,282,522$ $316,176,181$ |  | 59，554， 218 | 40，884，231 | 二 | 115， 121,967 | 二 | 二 |  |  |
| Copper．．．．．is | 9，095，013 | 136，075 | $\begin{array}{r} 6,209,736 \\ 1,623 \end{array}$ | $105,602,844$ | 131， 458,795 | $\begin{array}{r} 19,891,109 \\ 69,986 \end{array}$ | $\begin{gathered} 43,655,333 \\ 16,185 \end{gathered}$ | －${ }_{59}$ | $115,121,967$ $38,418,929$ |  | － | $973,799,939$ $324,467,834$ | 1，034，493，452 |
| Gold．．．．oz．t． | 16，717 | －63 |  |  | 2，155，370 |  |  |  | 139，959 | $\overline{57}, 844$ | 412， 879 | $3,835,454$ | $\begin{aligned} & 88 \\ & 3,600, 034 \end{aligned}$ |
|  | 631，067 | 2，378 | 61，268 | 35，287，530 | 81，365，217 | 2，641，972 | 1，743，484 | 2，227 | $5,283,452$.. | 2，183，611 | 15，586，182 | $\begin{array}{r} 3,835,454 \\ 144,788,388 \end{array}$ | $\begin{array}{r} 3,608,348 \\ 136,142,969 \end{array}$ |
| Indium．．oz．t． | － | － | 二 | 二 | 二 | 二 | 二 | － |  |  |  | $\because$  <br> $\cdots$  |  |
| Iron ore．．．ton | 12，763，575 | － | － | 15，512，916 | $\begin{array}{r} 8,046 \\ 85,769 \\ 85,613,354 \end{array}$ | 二 | － | － | $\begin{array}{r} 2,002,562 \\ 20,419,487 \end{array}$ | － | － | $\begin{array}{r} 38, \ddot{3} \dot{2} 5,822 \\ 404,951,696 \end{array}$ | 39，790，103 |
|  | 137，038，680 |  |  | 161，880， 175 |  |  | － |  |  | － | 二 |  | 419，393，${ }^{\text {a }}$ ， 58 |
| Iron，${ }^{\text {ton }}$ | 二 | 二 | － | ［ $\begin{array}{r}429,383 \\ 18700,185\end{array}$ | － | － | － | － | － | 二 |  | $18,700,185$ $16,596,380$ |  |
| Lead．．．．．．1b． | 50， 829,256 | 3，337，628 | 43，$\overline{31}, 670$ | 7，908，961 | 4，054， 865 |  | － |  | $268,737,504$ | $20,4 \overline{4}, 415$ | 6，125，588 | $407,433,858$ | $\begin{array}{r} 16,596,380 \\ 573,621,676 \end{array}$ |
|  | 6，831，452 | 448，577 | 5，837，216 | 1，062，964 | 514，974 | 2，348，092 | － | 二 | 36，118，321 | 2，744，235 | 6，125，588 | $\begin{aligned} & 54,759,110 \\ & 18,706.020 \end{aligned}$ | $88,911,360$$22,265,647$ |
| Magnesiumlb． | － | － |  |  | 18，705，020 | － | － |  |  |  | 二 |  |  |
|  | － | － | － |  | 5，587，909 | － | － |  | － |  | 二 | 5，587，909 | $\begin{array}{r} 6,697,506 \\ 1,520 \end{array}$ |
| Mercury ．．．lb ${ }_{\text {\％}}$ | － | 二 | 二 | 二 | － | － | 二 |  | 5,548 22,848 |  | － | $\begin{array}{r} 5,548 \\ 22,848 \end{array}$ |  |
| Molyb－ |  |  |  | 1，185， 074 | 11，393 |  |  |  | 28,24547,063 | － |  | $\begin{array}{r}\text { 22，} \\ 1,2248 \\ \hline 172\end{array}$ | $\begin{array}{r} 15,449 \\ 9,691,20 \\ 16,759,950 \end{array}$ |
| denum． |  |  |  | 1，991，294 | 19，026 |  |  |  |  | 二 | － | 2，057，383 |  |
| Nickel．．．．lb． | － | － | － | 4，677，108 | 324，187，190 | 124，729，654 | － |  | $\begin{aligned} & 3,398,560 \\ & 2,854,790 \end{aligned}$ |  | － | 456，992，512 | $\begin{array}{r} 16,759,950 \\ 522,310,371 \end{array}$ |
|  |  |  |  | 3，928，771 | 267，764，039 |  |  |  |  | 二 |  | 379，320，510 | 435，332， 054 |
| Platinumoz．t． | － | － | － | － | 3576，238 |  | 二 | 二 | 2， |  | 二 | －376，238 | －45， 678,063 |
| $\begin{aligned} & \text { group. } \\ & \text { Selenium. } 1 \mathrm{~b} \text {. } \end{aligned}$ | 二 | 二 | 二 |  | 25，404， 117 | $\ddot{36}, 178$ |  |  |  | － | 二 | 25，404，117 | $35,678,078$ 504,109 |
|  |  |  |  | 1，357，195 | 108，789 | 175， 463 | 217，421 | 二 |  |  |  | 2，258，868 | 2，435，704 |
| Silver．．．oz．t． | 1，089，748 | 544，224 | 1，469， 192 | 4，564，559 | 9，929，858 | 727，642 | 593，320 | 4 | 5，280，129 | 5，638，712 | 65，223 | 29，902，611 | 32，964，299 |
|  | 1，525，647 | 761，914 | 2，056，869 | 6，390，383 | 13，901， 801 | 1，018， 699 | 830,648 | 6 | 7，392，180 | 7，894，196 | 91，312 | 41，863，655 | 46，117，054 |
| Tellurium．lb． | － | － | － | 64，063 | 7，900 | 2，599 | 3，220 | － | － | － | － | 77，782 | －86，264 |
| Thor |  | 二 | 二 | 416，409 | 51，350 | 16，894 | 20，930 | 二 | － | 二 | 二 | 505，583 | 554，793 |
|  |  |  | 二 | － | ． | － | 二 | 二 |  |  |  | ． | ． |
| n．．．．．．lb． | － | － | － | － | － | － | － | － | 352，350 | － |  | 352，350 | 409，106 |
|  | － | － | － | － | － | － | － | － | 533，572 | － | － | 533，572 | 810，030 |
|  | 二 | － | － | 二 | 二 | － | － | 二 | 二 | － | $\cdots$ | $\cdots$ | $\because$ |

8.-Detailed Mineral Production, by Province, 1964 with Preliminary Totals for 1965-concluded


| Pozzolan．ton | － | －－ |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Pyrite，tor ${ }^{\text {a }}$ | － |  |  |  |  | － | 二 | 二 |  |  | 二 | 35， 200 351,850 | $\begin{gathered} 35.000 \\ 352 ; 808 \end{gathered}$ |
| Quartiotite： | 二 |  |  |  |  |  |  |  |  |  |  | 1，126，177 | 1，889，228 |
| Quartz．．．．ton | 二 |  |  | 2， 692,249 | 1．127，${ }^{8365}$ | 301，472 |  |  | 42,002 162,718 | 二 |  | ${ }_{2}^{2.117,273} 4$ | － $\begin{gathered}2,381,555 \\ 4,943,639\end{gathered}$ |
| Salt．．．．．． |  |  |  |  |  | 27,744 630,670 | （17，952 | 101，411 |  |  |  | 3，988，598 | 4，${ }^{\text {a }}$ ， 311,100 |
|  |  | 4．939，806 |  |  | 11，552，${ }^{\text {，} 5660}$ | ${ }^{630,670}$ | 1，487，277 | 1，593，430 | － |  |  | － | 21，564，784 |
|  | 492.240 | － | － | 199，049 | 136， 468 |  | － |  | － | － |  | 827；757 | 802，010 |
| Sodium ${ }^{\text {phymen }}$ | － | － |  | － |  | － |  |  |  | － |  | 333，263 | 346，000 |
| Sulphate． |  |  |  |  |  |  | 5，222，313 |  |  |  |  | 5，222，313 | 5，590，312 |
| amelter ton |  |  |  |  |  | － | 二 | － |  |  |  | 443，448 | 122 |
|  | － | 二 |  | 345，234 | 1，664，300 | － |  |  | 2，235，010 |  |  |  | ${ }_{723}$ |
| elemental． | ＝ | 二 | 二 | － | i2， 427 | 33.988 | 160，477 | 16，8008， 139 | 1，624， |  |  | 18， 837 ； 5477 | 23，40；，947 |
| Titanium ton dioxide，\＄ etc． | － | － | 二 | 21，270， | － | 二 | こ |  |  | － | － | 21，270， 144 | 19，955，350 |
| Fuels |  |  |  |  | 9，774 | 236，54 |  |  | 45， |  |  |  |  |
| Coal | 二 | 4， $4,293,1130$ | 1，00 | － |  |  | 1，994， 039 | 2，971，133 | 1，050． |  |  | ${ }_{11} 1319,323$ | 11．425，000 |
| Natural | － | 827， | $8,154,889$ <br> 105，055 |  | 13，815， |  |  | （1， $11.189,754,869$ |  | 98， 150 |  | 72，735 | 71．645，000 |
|  | － | － | 112，303 | － | 5，759，876 |  | 4，160， 782 | 149．594，796 | 13，324，698 | － | 14，40， | 172，966，859 | 197，206，911 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | － | － | － | － |  |  | 2，272， | 73，338，176 | 3，078， | － |  | 8， 689.000 | 92，547，454 |
| crude．bol | － | 二 |  | － | 1，246，6 | 4， 417.224 | 81，404，430 | 175，441．589 | 12，525．476 | 二 | 586， 298 | 274， 626,385 | 293，571，941 |
|  |  |  | 6, |  | 4，014，316 | 10，296，549 | 186，171，931 | 450，186，921 | 23，261，946 | － | 438，549 | 674，376，728 | 718，248，241 |
| Struetural Materlals．．． 8 | 5，988，028 | 7，147，080 | 9，355，26 | 119，205，498 | 109，063，366 | 17，441，570 | 12，84， 221 | 32，969，566 | 28，222，352 | － | － | 403，058，334， | 483，185，127 |
| ${ }_{\text {Clay }}$ Products． ， |  | 1，541， |  |  |  |  |  |  |  |  |  |  |  |
| Cement．．．ton | 90，453 | － | 174，23 | 2，631， | 3，043， | 350.762 | 1247 | 771，977 | ${ }_{537}$ |  |  | 7，847，384 | 8， 226,971 |
| Lime | 833，743 | 二 | 2，903，033 | 41，627， | 46，80， | 7，530，860 | 5，612， 241 | 14，346，958 | 10，040，776 | － | － | 130，704，220 | 144，682， 127 |
|  |  |  | 120， 245 | 4， 122, | 13，${ }^{12797}$ ，${ }^{\text {a }}$ | 57,196 916,693 |  | 1，115， 5961 |  |  |  | 1．540．727 | － $17.716,780,945$ |
| Sand and ton | $\begin{aligned} & 4,657,737 \\ & 2,601 \end{aligned}$ | ${ }_{6}^{6.562 .341}$ | 4，699，${ }^{4}$ | 4， 4.50000 | 7 7 7， 917,2966 | 9，871，883 | 9．266．648 | 1， $16,777,687$ | 19，929，177 |  |  | 199．791．3582 | 192， 857.375 |
| mavel．${ }^{\text {and }}$ | 3，501，694 | 4，244，659 | 2，640，5 | 21， 3600000 | 54，589，444 | 7，311，781 | 5，885，697． | 13， 302,424 | 11，914，601 |  |  | 125，232． 332 | 129，329，647 |
| －．．．．ton | 533，533 | $\begin{gathered} 3,361,3,044 \end{gathered}$ | $\left\|\begin{array}{l} 3,058,061 \\ 2,982,459 \end{array}\right\|$ | $\begin{aligned} & 37,, 305,163 \\ & 45,255,578 \end{aligned}$ | $\begin{aligned} & 23,845,993 \\ & 30,818,734 \end{aligned}$ | 1，162，510 | 二 | $\begin{aligned} & 129,364 \\ & 417,024 \end{aligned}$ | ${ }_{3}^{2}$ |  | 二 | － $69,794,382,683$ | $69,156,175$ <br> 88，837，479 |
| Grand Totals 1964 $\qquad$ | 182，152，666 | 66，073，596 | 48，676，712 | 681，583，430 | 901，582，634 | 173，872，576 | 292，373，974 | 735，886，463 | 268，659，305 | 15，204，103 | 18，064，742 | 971，57 |  |
| als |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 6 | 66，633，831 | 83，944，036 | 701，704， 774 | 886，183，278 | 182，010，655 | 327，326， 166 | 799，344，875 | 286，161，560 | 13，341，266 | 72，862，708 | －．． | 3，743，981，2484 |

## Subsection 1.-Metals

The metallic minerals of greatest dollar value to Canada during 1965 were, in order: nickel, iron ore, copper, zine, gold, lead, uranium and silver. These eight metals, which accounted for almost 95 p.c. of the total value of metal production in 1965 , and several other items of importance are dealt with separately below.

Nickel.-Canadian nickel production in 1965 was 261,155 tons valued at $\$ 435,332,054$, a production increase of 14 p.c. over 1964. Canada maintained its position as the world's leading nickel producer but higher production in the Soviet Union, New Caledonia and Cuba reduced Canada's portion to about 50 p.c. Its leading producers-The International Nickel Company of Canada, Limited, Falconbridge Nickel Mines Limited, and Sherritt Gordon Mines Limited-are among the world's largest.

Near Sudbury in Ontario, International Nickel operated eight mines-the Creighton, Frood-Stobie, Garson, Levack, Murray, Crean Hill and Maclennan underground mines and the Clarabelle open pit-and had five under development. Also near Sudbury, Falconbridge operated six mines-Falconbridge, East, Onaping, Hardy, Fecunis and North -and had one under development. (See also p. 546.) In Manitoba, Sherritt Gordon's Lynn Lake mine operated at 3,800 tons daily. Nickel matte was imported to supplement the concentrates delivered from Lynn Lake to the Fort Saskatchewan, Alta., refinery. International Nickel was developing the Birchtree and Soab mines for production in the Thompson district to supplement production from its mine at Thompson where the company operates the world's only integrated nickel mining-concentrating-smelting-refining facility.

Smaller nickel-mining operations were carried out in Quebec, Ontario and British Columbia. In Quebec, Marbridge Mines Limited, in LaMotte Township, produced a bulk nickel-copper concentrate for treatment at Falconbridge's smelter, and Lorraine Mining Company Limited, which started production in March at its nickel-copper mine near Belleterre, shipped about 34,000 tons of concentrate to International Nickel for smelting. In northwestern Ontario, the Werner Lake mine of Metal Mines Limited produced 19,094 tons of bulk nickel-copper concentrate which was shipped to International Nickel for smelting. Giant Mascot Mines, Limited, near Hope, B.C., produced 18,000 tons of nickel-copper concentrate for export to Japan.

Nickel prices remained stable during the year. The duty of $1 \frac{1}{4}$ cents a pound on nickel entering the United States was suspended and the price to United States customers was reduced from 79 to $77 \frac{3}{8}$ cents a pound. The price to Canadian consumers remained at 84 cents a pound. Both prices were f.o.b. Port Colborne, Ont.
9.-Producers' Shipments of Nickel, by Province, and Total Value 1956-95

| Year | Quebec | Ontario | Manitoba | British Columbis | Nortbwest Territories | Canada |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | Quantity | Value |
|  | tons | tons | tons | tons | tons | tons | \$ |
| 1956. | - | 167,576 | 10,939 | $\square$ | - | 178,515 | 222,204,860 |
| 1957 | - | 177,386 | 10,034 |  | ${ }^{528}$ | 187,958 139,569 | 258, $194.142,019$ |
| 1958. | - | 127,144 | 9.778 | 704 | 1,933 | 189, 5359 | 194, 142,019 |
| 1959. | 二 | 173,964 201,650 | 10,139 $\mathbf{9 , 0 5 9}$ | 1,890 | 1,921 1,907 | 186,555 214,506 | 2575,640,879 |
| 1960. | - | 201,650 | 9,059 | 1,890 | 1.907 | 214,506 | 285,040,279 |
| 1961. | $\checkmark$ | 196,218 | 32,978 | 2,090 | 1,705 | 232,991 | 351,261,720 |
| 1982. | 1,540 | 166,582 | 61,482 | 1,738 | 900 | 232,242 | 383, 784,622 |
| 1953. | 2.506 | 149,089 | 63, 585 | 1,850 | - | 217,030 | 379,320,510 |
| 1904. | 2.338 | 162,094 | 62,365 63,284 | 1,699 $\mathbf{1}, 811$ |  |  | 135,332,054 |
| 1965P. | 3,305 | 192,655 | 63,284 | 1,811 | - | 281,155 | 135,332,04 |

Iron Ore.-Iron ore shipments in 1965 increased for the fourth consecutive year and amounted to $39,790,103$ tons valued at $\$ 419,393,058$, an increase of 4 p.c. over the previous year. Quebec was the largest producing province, accounting for $14,781,630$ tons, followed by Newfoundland-Labrador with 14,606,915, Ontario with 8,295,969, and British Columbia with $2,105,589$ tons. In 1965,16 companies were directly engaged in iron ore mining-one on the Island of Newfoundland, one in Labrador, one with mines in both Labrador and Quebec, two in Quebec, six in Ontario and five in British Columbia. In addition, four companies shipped iron ore as a by-product of base metal operations.

In Newfoundland, Dosco Industries Limited continued research on ore from its Wabana mine to find economic methods for up-grading the mines. The company continued to experience difficulty in marketing its ore because of its relatively low iron and high phosphorus and silica contents. Iron Ore Company of Canada, with direct-shipping ore from deposits on both sides of the Labrador-Quebec border at Schefferville and a concen-trating-grade deposit near Labrador City, is the largest shipper, accounting for 24 p.c. of the 1965 shipments. Quebec Cartier Mining Company, the second largest, accounted for 23 p.c. Other shippers were Wabush Mines in Labrador; Hilton Mines, Ltd., in Quebec; and Algoma Ore Properties Division of Algoma Steel Corporation, Steep Rock Iron Mines Ltd., Caland Ore Company Litd., Lowphos Ore Ltd., Marmoraton Mining Company, and Jones \& Laughlin Steel Corporation, in Ontario. Oglebay Norton Company in Ontario shipped small tonnages of ore from stockpile. In British Columbia five companies shipped iron ore--Zeballos Iron Mines Limited, Coast Copper Company Limited, Texada Mines Limited, Bryonor Mines Limited and Jedway Iron Ore Limited. By-product iron ore producers were the Consolidated Mining and Smelting Company of Canada Limited (Cominco Limited), International Nickel Limited, Falconbridge Nickel, and Quebec Iron and Titanium Corporation.

Pellet shipments in 1965 amounted to $9,953,000$ tons, an increase of 42 p.c. over 1964. Shipments were made by Arnaud Pellets, Pointe Noire, Que.; Carol Pellet Company, Labrador City, Labrador; Hilton Mines, Shawville, Que.; Jones \& Laughlin Steel (Adams Mine), vear Kirkland Lake, Ont.; Lowphos Ore Ltd., Sudbury area, Ont.; Marmoraton Mining Co., Ltd., near Marmora, Ont.; and International Nickel, Copper Cliff, Ont.

Annual iron ore productive capacity in Canada at the end of 1965 was $45,400,000$ tons, 16.7 p.c. higher than in 1964. This included $15,600,000$ tons of pellets, $12,400,000$ tons of high-grade concentrates in addition to that used to make pellets, and $17,400,000$ tons of medium-grade ores and concentrates containing less than 58 p.c. natural iron. On completion of planned iron ore pellet plants, productive capacity will be $21,400,000$ tons a year in 1967 and $24,100,000$ tons a year in 1968.

Two small mines in British Columbia-Orecan Mines Limited and Empire Development Company Limited-neared production at the end of 1965 and construction continued at Wesirob Mines Limited's Moresby Island property. In Ontario, development of Dominion Foundries and Steel Limited's $\$ 40,000,000$ Sherman Mine project at Timagami was begun, with completion scheduled for 1968 ; its capacity will be $1,200,000$ tous of pellets a year. In addition, several large projects were being considered for early development.

Canadian iron ore is consumed by steel industries in five main market areas-Canada, the United States, Britain, Japan and Western Europe. Shipments to domestic ateel plants, to Japan and to Western Europe were higher in 1965 than in the previous year but those to the United States and Britain were lower. The United States is the world's largest iron ore importer and is Canada's largest market, accounting for 67 p.c. of total Canadian shipments in 1965 even though the amount shipped to that country was a million tons lower than in 1964. The decline in shipments to Britain from $3,200,000$ tons in 1964 to $2,900,000$ tons in 1965 was mainly the result of intensive competition from West African ores. Western European imports from Canada increased approximately 1,500,000 tons to about 2,300,000 tons in the same comparison and reflected greater consumption of highgrade concentrates and pellets, mainly in West Germany, Italy, Belgium and Luxembourg. Total Canadian exports in 1965 were $30,800,000$ tons compared with $30,500,000$ tons in 1964.

Canadian consumption of iron ore in 1965 , at $12,200,000$ tons, was up about 5 p.c. from 1964 but imports, which amounted to $4,800,000$ tons, were down 8 p.c. Most imported ore came from Michigan and Minnesota, although 259,225 tons came from Brazil.

## 10.-Iron Ore Shipments and Production of Pig Iron and Steel Ingots and Castings, 1956-65

| Year | Iron Ore Shipments |  |  |  |  |  | Production of Pig Iron | Production of Steel Ingots and Castings |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Newfoundland (incl. Labrador) | Quebec | Ontario | British Columbia | Canada |  |  |  |
|  |  |  |  |  | Quantity | Value |  |  |
|  | tons | tons | tons | tons | tons | \% | tons | tons |
| 1956. | 8,463,572 | 7,956,549 | 5,558,203 | 369,954 | 22,348, 278 | 160,362,118 | 3,568,203 | 5,301,202 |
| 1957. | 8,174,779 | 8,872,948 | 4,867,105 | 357, 342 | 22,272,174 | 167,221,425 | 3,718,350 | 5,068,149 |
| 1958. | 5,390,775 | 6,030,325 | 3,644,952 | 630,271 | 15,726, 323 | 126,131, 181 | 3,059,579 | 4,359,466 |
| 1959. | 6,105,819 | 11,515,169 | 6,018,089 | 849,248 | $24,488,325$ | 192,666, 101 | 4,182,775 | 5,901,487 |
| 1960. | 7,611,365 | 7,457,971 | 5,325, 197 | 1,156,297 | 21,550,830 | 175,082, 523 | 4,298,849 | 5,809,108 |
| 1961. | 7,611,340 | 5,639,931 | 5,772,664 | 1,335,068 | 20,359,003 | 187,950,047 | 4,946,021 | 6,488,307 |
| 1962. | 7,986,910 | 11,163,982 | 6,414,936 | 1,793,848 | 27,359,676 | 263,004,217 | 5,276,753 | 7,173,534 |
| 1963. | 9,683,004 | 11,650,787 | 6,749,617 | 2,030,241 | 30, 143, 649 | 313,182,963 | 5,914,997 | 8,190,279 |
| 1964 | 12,763,575 | 15,512,916 | 8,046,769 | 2,002,562 | 38, 325,822 | 404,951,696 | 6,550,835 | 9,132,174 |
| 1965 p. | 14,606,915 | 14,781,630 | 8,295,969 | 2,105,589 | 39,790,103 | 419,393,058 | 7,064,880 | 10,028,899 |

Copper.-Mine production of copper in 1965 was 517,247 tons valued at $\$ 388,005,039$, an increase of 30,347 tons and $\$ 63,537,205$ over 1964. There was a sharp increase in the production and consumption of refined copper but exports of copper in primary forms decreased. Mine production increased in all producing provinces except Saskatchewan and British Columbia. New mines were brought into production in Newfoundland, Quebec, Ontario and Saskatchewan and a number of mines were under development. Two mines were re-opened in British Columbia and one was closed by a strike.

Six smelters for the reduction of copper and nickel-copper ores and concentrates are operated in Canada. In the Sudbury district of Ontario, International Nickel operates smelters at Copper Cliff and Coniston, and Falconbridge Nickel produces nickel-copper matte at its Falconbridge smelter. Hudson Bay Mining and Smelting Co., Limited at Flin Flon, Man., smelts concentrates from its mines in Manitoba and Saskatchewan and copper concentrates from the mine of Sherritt Gordon at Lynn Lake, Man. Ores and concentrates from most of the copper mines in Ontario, Quebec and Newfoundland are smelted at the Noranda smelter of Noranda Mines Limited and the Murdochville smelter of Gaspe Copper Mines Limited, both in Quebec. Electrolytic copper refineries are operated by International Nickel at Copper Cliff and by Canadian Copper Refiners Limited, a subsidiary of Noranda Mines, at Montreal East, Que. Production of refined copper in 1965 was 434,133 tons, 6 p.c. more than in 1964.

In Newfoundland, British Newfoundland Exploration Limited started production in July from its Whalesback Pond mine; there were five producing mines and one mine under development in that province in 1965. Production totalled 17,348 tons valued at $\$ 13,045,795$, an increase of 3,733 tons and $\$ 3,950,782$ over 1964. First Maritime Mining Corporation Limited was developing the Gull Pond property for production in 1966. Output from New Brunswick's three copper producers totalled 9,696 tons valued at $\$ 7,291,392$, only slightly higher than in 1964; two mines were being developed in the Bathurst area for production in 1966.

Quebec copper mines produced a record 176,074 tons of copper valued at $\$ 132,407,661$, being 17,986 tons and $\$ 26,804,817$ more than in 1964. A major expansion program was started at the Murdochville mine and mill of Gaspe Copper Mines; when completed in 1967, capacity of the mill will be 11,000 tons of ore a day and the Copper Mountain mine will be producing about 4,000 tons of ore a day. Rio Algom Mines Limited started mill tune-up at its Mines de Poirier mine north of Amos.

Ontario's copper production also continued to increase and reached 219,183 tons valued at $\$ 163,860,900$ in $1965,21,266$ tons and $\$ 32,402,105$ more than in 1964. International Nickel produced nickel-copper ore from eight mines in the Sudbury district and was developing five mines in this area. Falconbridge operated six mines in the Sudbury area and was developing the Strathcona mine on the north rim of the basin. Texas Gulf Sulphur Company continued development of its mine near Timmins and was building a 9,000 -ton-a-day concentrator for production in late 1966. Willroy Mines Limited and Lun-Echo Gold Mines Limited brought the Willecho mine near Manitouwadge into production in March and Sheridan Geophysies Limited started production in October at 500 tons of ore a day from its Coppercorp mine near Batchawana. Other copper-producing mines in Ontario include: Kam-Kotia Porcupine and McIntyre-Porcupine at Timmins; Copperfield's Temagami mine at Timagami; Noranda's Geco mine at Manitouwadge; Rio Algom's Pater mine at Spragge and North Coldstream's mine at Kashabowie.

Manitoba-Saskatchewan's two major producers, Hudson Bay Mining and Smelting and Sherritt Gordon, had a combined output of 50,247 tons valued at $\$ 37,785,891$, a very slight increase over 1964. Hudson Bay operated a central mill and smelter at Flin Flon, treating ores from the Schist Lake, Chisel Lake and Stall Lake mines in Manitoba, the Coronation mine (closed in August) in Saskatchewan and the Flin Flon mine that straddles the Manitoba-Saskatchewan boundary. The company continued exploration and development at its Osborne Lake and Anderson Lake mines near Snow Lake, Man. Sherritt Gordon produced copper concentrates at its Lynn Lake, Man., mine for shipment to Hudson Bay's smelter, and nickel-copper concentrates for shipment to its own smelter at Fort Saskatchewan, Alta. The company was preparing for underground exploration on its copper-zinc deposit at Fox Lake, some 34 miles southwest of Lynn Lake.

Production in British Columbia decreased for the second consecutive year; at 44,069 tons, production was 23 p.c. lower than in 1964 and its value, at $\$ 33,139,640$, was down 14 p.c. A prolonged strike at the Craigmont mine, a late start after the settlement of the Britannia strike in March and continued closure of the Sunro mine contributed to decreased production. The Sunro mine of Cowichan Copper Co., Ltd., on Vancouver Island, that was flooded in 1964 was rehabilitated and mill tune-up started in December 1965. The Anaconda Company (Canada) Limited rebabilitated the Britannia mine and was preparing to mine low-grade ore from the surface outcrop. Western Mines Limited was preparing its mine at the south end of Buttle Lake on Vancouver Island for production at 750 tons of ore a day in 1966. At Babine Lake, northeast of Smitbers, The Granby Mining Company Limited was preparing the Granisle mine for production in late 1966. Production from the Unuk River property of Granduc Mines Limited, development of which was delayed by a disastrous avalanche, is now scheduled for late 1969. New Imperial Mines Limited near Whitehorse, X.T., was preparing several orebodies for open-pit mining in 1966.

## 11.-Producers' Shipments of Copper, by Province, and Total Value 1956-65

Notr.-Figures from 1886 are given in the corresponding table of previons Year Books beginning with the 1916-17 edition.

| Year | New. toundland | Nova scotia | New Brungwick | Quebec | Ontario | Manitoba |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | tons | tons | tons | tons | tons | tons |
| 1956... | 3,108 | 404 | 8 | 122,300 | 156,271 | 17.973 |
| 1957. | 4,536 | - | 5,738 | 112,409 | 171.703 | 18.551 |
| 1958. | 14,751 | - | 328 | 131,445 | 142.035 | 12,601 |
| 1959. | 14,989 | 二 | - | 134,912 | 188.272 | 12,945 |
| 1960 | 13,863 | - | - | 157,470 | 206,272 | 12,783 |
| 1961. | 15,752 | - | - | 149,007 | 211,647 | 12,454 |
| 1982. | 17.308 | 204 | 3,674 | 147.431 | 188.985 | 12,788 |
| $19 \hat{6} 3$. | 14,012 | 237 | 8.964 | 141.400 | 178.960 | 16.980 |
| 1964. | 13,615 | 204 | 9,296 | 158,088 | 197,917 | 29,777 |
| 1965P. | 17,348 | 205 | 9,606 | 176,074 | 219,183 | 31,011 |

11.-Producers' Shipments of Copper, by Province, and Total Value 1956-65-concluded

| Year | Sabkatchewan | British | $\begin{aligned} & \text { Yukon } \\ & \text { Territory } \end{aligned}$ | Northwest Territories | Canada |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Quantity | Value |
|  | tone | tons | tons | tons | tona | \% |
| 1956. | ${ }^{33,116}$ | ${ }^{21,682}$ | - |  | ${ }_{354,860}^{350}$ | 292,958,091 |
|  | 30,697 37,510 | 15,410 6,010 | $\underline{-}$ | 165 <br> 434 | 359,109 345,114 | 206, $274,437,9888$ |
| 1959. | 35,536 | 8,121 |  | 494 | 3995,269 | 233,102,813 |
| 1960. | 31,785 | 16,559 | - | 520 | 439,262 | 264,846,637 |
| 1961. | 33,479 | 15,845 |  |  | 439,087 | 255, 157,626 |
| ${ }^{18863}$ | 32,017 | 54,489 | 215 | 314 | ${ }^{457} \times 1885$ | ${ }^{282}$ 28,732,696 |
| 1983. | 29,772 20 20.442 | 62,218 <br> $\begin{array}{l}\text { 57.561 }\end{array}$ |  | 16 | 452,559 486,900 | $284,403,710$ 324.46784 |
| 19695. | 20,442 19,236 | 47,501 44,069 | こ | 425 |  | $324.467,834$ $388,005,039$ |

Lead and Zinc.-Production of lead in 1965 totalled 286,811 tons, 41 p.c. more than in 1964. Refinery production at Trail, B.C., was 186,484 tons, 35,112 tons more than in 1964. Exports of lead in concentrates totalling 106,964 tons of contained lead compared with 80,357 tons in 1964, went mainly to the United States and Belgium with lesser amounts to Britain, Italy and West Germany Exports of refined lead amounted to 129,065 tons, 33,198 tons more than in the previous year. Lead prices were steady throughout 1965 at 15.5 cents a pound.

Zinc production continued to rise in 1965, reaching a record 831,902 tons which was 147,389 tons more than in 1964. Refinery production at Trail, Flin Flon and Valleyfield was also higher, rising from 337,728 tons in 1964 to 358,779 tons in 1965. Exports of zinc in concentrates, totalling 487,445 tons, went mainly to the United States ( 231,597 tons), Belgium ( 156,725 tons), Poland ( 35,113 tons), and West Germany ( 22,034 tons). Refined exports amounted to 264,200 tons and went mainly to the United States and Britain. Zine prices were steady throughout 1965 at 14.5 cents a pound. The United States Government late in 1965 ended its system of import quotas on lead and zinc ores, concentrates and unmanufactured metal that had been in effect since October 1958. The controls had limited imports from Canada to 80 p.c. of the 1953-57 average.

Production of lead and zinc in the Northwest Territories rose in 1965 to 78,362 tons and 93,562 tons, respectively, from minor amounts produced the previous year. The increase was due to the start of production at Pine Point on the south shore of Great Slave Lake where high-grade ore was shipped during the year and a 5,000 -ton-a-day concentrator began mill tune-up in November 1965. Lead and zinc were produced in the Yukon Territory by United Keno Hill Mines Limited, which operates mines in the Mayo district, 285 miles north of Whitehorse.

British Columbia's production was mainly from the southeastern part of the province, most of it being accounted for by Cominco Limited, which operates the Sullivan mine at Kimberley, the H.B. mine at Salmo and the Bluebell mine at Riondel; daily lead-zinc ore production from the three mines was, respectively, $10,000,1,200$ and 700 tons. Other producers in this part of the province included Canadian Exploration Limited at Salmo, Reeves MacDonald Mines Limited at Remac, and Aetna Investment Corporation Limited at Toby Creek. British Columbia's only producer of copper-zinc ore was the Britannia mine of The Anaconda Company (Canada) Ltd. There are a number of smaller lead-zine producers in British Columbia; Cominco Limited treats concentrates from most of these properties, some from the Yukon Territory and foreign concentrates at its Trail smelter.

Zinc and lead were recovered from copper-zinc-lead ores of the Flin Flon mine straddling the Saskatchewan-Manitoba border and operated by Hudson Bay Mining and

Smelting. This company also operates the Schist Lake mine near Flin Flon and the Chisel Lake and Stall Lake mines 90 miles east of Flin Flon. Ore from all company mines is milled at Flin Flon.

In Ontario, Noranda Mines Limited (Geco Division) and Willroy Mines Limited, both at Manitouwadge, produced zinc, lead and copper concentrates; Kam-Kotia Porcupine Mines Limited at Timmins produced copper concentrates and a small tonnage of zinc concentrates. Two new mines were opened-the Willecho at Manitouwadge early in 1965 and the Zenmac near Schreiber early in 1966. At Port Maitland on Lake Erie, zinc concentrates from Ontario and Quebec mines were roasted by Sherbrooke Metallurgical Company Limited and the resulting calcine was shipped to the United States for final treatment.

Quebec's lead production showed little change from 1964 to 1965 but its zinc output rose from 236,540 tons to 275,788 tons. Production of zinc from the new Matagami Lake camp totalled 194,600 tons and a new producer in the Noranda district, Lake Dufault Mines Limited, produced about 30,000 tons of contained zinc from copper-zinc ores. Other mines in Quebec were the Normetal (copper-zinc), Quemont (copper-zinc), Manitou-Barvue (copper-zinc-lead) and East Sullivan (copper-zine), all in the Noranda-Val d'Or area; New Calumet (zinc-lead) at Calumet Island on the Ottawa River; Coniagas (zinc-lead-silver) at Bachelor Lake, and Solbec (copper-zinc-lead) in the Sherbrooke district. The Cupra mine, just south of the Solbec, was brought into production in September 1965.

New Brunswick's production of lead and zinc was up substantially from 1964. Brunswick Mining and Smelting Corporation Limited operated its No. 12 mine near Bathurst, completing the first full year of production. Construction of a zinc-lead blast furnace by the company continued at Belledune Point, 25 miles north of Bathurst where part of the Bathurst-district concentrates will be smelted. Heath Steele Mines Limited, near Newcastle, produced zinc, copper and lead concentrates. Nova Scotia's only lead-zine producer was Magnet Cove Barium Corporation, at Walton. In Newfoundland, regular production of lead, zinc and copper concentrates continued at the Buchans mine of American Smelting and Refining Company. Zinc was recovered from copper ore by Consolidated Rambler Mines Limited near Baie Verte.

Exploration and development were carried out in many areas during 1965. New mines were under development at Timmins, Ont., in the Joutel-Poirier district 60 miles north of Amos, Que., near Bathurst, N.B., in northern Manitoba, in northern Saskatchewan, and on Vancouver Island. Exploration programs of particular interest were carried out in the Ross River district of central Yukon Territory and in the Pine Point district of the Northwest Territories, where substantial discoveries of zinc-lead ore were announced.
12.-Producers' Shipments of Lead from $\underset{1956=65}{\text { Canadian }}$ Ores, by Province, and Total Value,

| Year | New. foundland | Novs Scotia | New <br> Brunswick | Quebec | Ontario |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | tons | ton9 | tons | tons | tons |
| 1950..... | 22,788 | 711 | 474 | 2,873 | 1,505 |
| 1957....... | 24,512 | - | 1,170 | 2,709 | 500 |
| 1958. | 23,980 | - |  | 3,150 | 1,256 |
| 1959. | 22,457 | - | - | 2,910 | 1,611 |
| 1960. | 24,022 | - | $\cdots$ | 2,669 | 831 |
| 1961. | 21,968 | - | - | 3,392 | 835 |
| 1962. | 25,330 | 2.682 | 1,879 | 4,716 | 1,144 |
| 1983... | 23,392 | 1,400 | 1,783 | 4,337 | 1,539 |
| 1964...... | 25,415 23,318 | 1,669 1,700 | 21,716 46,537 | 3,954 3,977 | 2,027 1,958 |
| 198SD.... | 23,318 | 1,700 | 46,537 | 3,977 | 1,958 |

12.-Producers' Shipments of Lead from Canadian Ores, by Prorince, and Total Value, 1956-65-concluded

| Year | Manitoba | British Columbis | Yukon Territory | Northwest Territories | Canada |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Quantity | Value |
|  | tona | tons | tons | tons | tons | \$ |
| 1956. | - | 147,701 | 12,802 | $\cdots$ | 188,854 | 58,582,651 |
| 1957. | - | 140,094 | 12,493 | - | 181, 484 | 50,670,407 |
| 1958. | - | 147,417 | 10,783 | - | 188,680 | 42, 413, 805 |
| 1959. |  | 148,922 | 10,796 | - | 180,696 | 39,616,835 |
| 1960. | 1,037 | 166,947 | 10,144 | - | 205,650 | 43,926,888 |
| 1961. | 3,054 | 192,800 | 8,385 | - | 230,435 | 47,054,765 |
| 1962. | 3.792 | 167,64] | 8,145 | - | 215, 329 | 42, 721,341 |
| 1963. | 2.737 | 157,487 | 8,490 |  | 201, 165 | 44,256. 198 |
| 1964. | 1,295 1,230 | 134,369 121,221 | 10,209 8,508 |  | 203,717 | 54, 759, 110 |
| 1965 D. | 1,230 | 121,221 | 8,508 | 78,362 | 288,811 | 88,911,360 |

13.-Producers' Shipments of Zinc, by Province, and Total Faite, 1956-45

| Year | New. foundland | Nova Seotia | New Brunswick | Quebec | Ontario | Manitoba |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | tons | tons | tons | tons | tons | tons |
| 1956. | 34,680 | 2,088 | 531 | 85,973 | 1,227 | 17.804 |
| 1957. | 35,698 |  | 3,314 | 74,295 | 11,296 | 13,729 |
| 1958. | 33,870 | - | 3,162 | 56,923 | 46.239 | 11,512 |
| 1959. | 31,674 |  |  | 47,058 | 44,982 | 15,702 |
| 1961. | 34,638 |  | - | 54,005 | 51,937 | 46,509 |
| 1962 | 32,541 | 757 | 2,498 | 70,737 | 63,132 | 49,920 |
| 1963. | 34,485 |  | 10,614 | 75.084 | 66,470 | 46,392 |
| 1965p.......... | 38,988 | 595 | 54,372 | 236,540 | 72,076 | 42,645 |
|  | 37,169 | 250 | 129,150 | 275,788 | 59,945 | 40,345 |
|  | Saskatcbewan | BritishColumbia | Yukon Territory | Northwest Territories | Canada |  |
|  |  |  |  |  | Quantity | Value |
|  | tons | tons | tons | tons | tons | 8 |
| 1956 | 45,380 | 224.323 | 10.526 | - | 422,632 | 125.487.344 |
| 1957. | 45,070 | 221,779 | 8,5¢0 | - | 413,741 | 100.042,533 |
| 1958. | 48,328 | 217.304 | 7,761 | - | 425,099 | 92,501,496 |
| 1959. | 46,877 | 203,092 | 6,623 |  | 396.008 | 9月.942,663 |
| 1960 | 42,703 | 203,833 | 6,702 | - | 408,873 | 108,635,003 |
| 1961. | 28,360 | 194,486 | 8.069 | - | 416.004 | 104,749,879 |
| 1962. | 30, 899 | 206,7!6 | 5,944 | 二 | 483,144 | 112,080,981 |
| 1963. | 33.320 | 201,432 | 5,925 |  | 473,722 | 121.083, 666 |
| 1964. | 28,437 | 200,398 | 6,547 | 3,920 | 684,513 | 198,990,987 |
| 1965p. | 28,134 | 160, 359 | 7,000 | 93,562 | 831,902 | 251,234,372 |

Gold.-Canadian gold production in the year 1965 totalled $3,608,348$ oz.t. valued at $\$ 136,142,969$, down slightly from 1964. The average price for gold paid by the Royal Canadian Mint in 1965 was $\$ 37.73$ per oz.t. in Canadian funds, down from $\$ 37.75$ the year before. On May 2, 1962, the Canadian dollar was stabilized at 92.5 cente in terms of the United States dollar with a permissible fluctuation of 1 p.c. either way from the fixed value. The range in value for the Canadian dollar is thus set at $\$ 0.916$ to $\$ 0.934$ in relation to the U.S. dollar and the corresponding Royal Canadian Mint gold price between $\$ 37.46$ and $\$ 38.22$ per oz.t.

Most Canadian lode and placer gold mines receive cost assistance under the Emergency Gold Mining Assistance Act (see p. 585) but the gold mines continue to experience economic difficulties as costs of recovery maintain an upward trend. Eight lode gold mines closed in 1965 mainly due to the exhaustion of economic ore reserves. Four minea began
production and two small mines operated on an intermittent basis. In 1965, the proportion of gold derived from lode deposits declined to 81.2 p.c. from 82.2 in 1964. By-product gold from base metal ores rose to 17.6 p.c. from 16.3 p.c. and placer gold amounted to 1.2 p.c. of the total, down from 1.5 p.c. Ontario was the principal producing province in 1965 , accounting for almost 54 p.c. of the total, and Quebec was second with over 25 p.c.; the Northwest Territories produced over 12 p.c. and British Columbia about 3.1 p.c.

In Ontario, production declined to $1,942,272$ oz.t. from 2,155,370 oz.t. in 1964. Thirtyone lode gold mines operated in the province but two operations were small and intermittent. Four mines-Wright-Hargreaves Mines, Limited and Lake Shore Mines, Limited, both at Kirkland Lake, Broulan Reef Mines Limited and Hugh-Pam Porcupine Mines Limited, a combined operation near Timmins, and Leitch Gold Mines Limited near Beardmoreceased operations. Lake Shore continued to operate its mill in a tailings reclamation program. Annco Mines Limited began ore shipments in 1965 from its Red Lake area mine. In the Matachewan district, Stairs Exploration and Mining Company began operations in mid-1965 with a small mill. An estimated 97,432 oz.t. of gold was recovered as a byproduct from base metal ores in Ontario compared with 57,772 oz.t. in 1964. Quebec's output declined to 906,417 oz.t. in 1965 from 934,769 oz.t. in 1964. Fourteen lode gold mines operated in the province during the year. Camflo Mattagami Mines Limited near Malartic and Wasamac Mines Limited near Noranda were new producers and Bevcon Mines Limited near Val d'Or and Canadian Malartic Gold Mines Limited and Malartic Gold Fields Limited at Malartic ceased operations. Gold recovered as a by-product from base metal ores represented over 41 p.c. of the provincial total.

In the Northwest Territories, estimated production in 1965 was 452,000 oz.t., a substantial increase over the 412,879 oz.t. produced in 1964. Discovery Mines Limited, Tundra Gold Mines Limited and the Con and Rycon mines of Cominco Limited all recorded higher lode gold production in 1965. Giant Yellowknife Mines Limited, Canada's largest lode gold mine, produced 255,024 oz.t., as compared with 266,752 oz.t. the year before. Production declined at both of British Columbia's lode gold mines-Bralorne Pioneer Mines Limited and The Cariboo Gold Quartz Mining Company Limited. The reduction at Bralorne Pioneer was mainly due to a planned decrease in the milling rate for about two months while shaft deepening was in progress. Total production from all sources in 1965 was 112,786 oz.t. compared with 139,959 oz.t. in 1964.

Manitoba and Saskatchewan combined accounted for 120,611 oz.t. in 1965, compared with 116,171 oz.t. in 1964. Production from San Antonio Gold Mines Limited, the only lode gold mine in the two provinces, declined to 24,969 oz.t. from 28,773 oz.t. in 1964. Most of the production is derived from base metal ores mined in the Flin Flon area. In the Yukon Territory, almost all of the 46,878 oz.t. produced in 1965 came from placer operations; output in 1964 was 57,844 oz.t. In Newfoundland and New Brunswick some gold was recovered as a by-product of base metal production.

## 14.-Producers' Shipments of Gold, by Province, and Total Value, 1956-65

Nore.-Figures from 1862 are given in the corresponding table of previous Year Books beginning with the 1916-17 edition.

| Year | Newfoundland | Nova Scotia | New <br> Brunswick | Quebec | Ontario | Manitoba | Saskatchewan |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | oz.t. | oz.t. | oz.t. | oz.t. | oz.t. | oz.t. | oz.t. |
| 1956. | 8,213 | 1,279 | - | 1,036,059 | 2,513,912 | 120,232 | 82,687 |
| 1957. | 9,755 | 45 | 240 | $1,006,895$ | 2,578,206 | 120,008 | 75, 236 |
| 1958. | 13,381 | 131 | 52 | 1,044, 846 | 2,716,514 | 87,356 | 86,590 |
| 1960. | 13,411 | - | - | 1,999,388 | 2,683,449 | 51,186 | 78,588 |
| 1960. | 13,515 | 3 | - | 1,035,914 | 2,732,673 | 52,762 | 84,775 |
| 1961. | 14,429 | - | - | 1,054,029 | 2,637,720 | 57,747 | 70,784 |
| 1962. | 13,966 | - | 553 | 1,993,560 | 2,421,249 | 68,259 | 66,034 |
| 1963. | 12,318 | - | 1,128 | 917,229 | 2,338,854 | 53,084 | 64,813 |
| 1964.. | 16,717 | 63 | 1,623 | 934,769 | 2,155,370 | 69,986 | 46,185 |
| 1965p. | 25,491 | 8 | 1,700 | 906,417 | 1,942,272 | 70,194 | 50,417 |

14.-Producers' Shipments of Gold, by Province, and Total Value, 1956-65-concluded

| Year | Alberta | British Columbia | Yukon Territory | Northwest Territories | Canada |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Quantity | Vslue |
|  | ox.t. | oz.t. | oz.t. | oz.t. | oz.t. | \% |
| 1956. | 119 | 196,692 | 72,001 | 352,669 | 4,383,863 | 151,024,080 |
| 1957. | 416 | 229,113 | 73,962 | 340,018 | 4, 433,894 | 148,757,143 |
| 1958. | 282 | 210.612 | 67,745 | 343,838 | $4,571,347$ | 155,384, 370 |
| 1959 | 200 | 184,312 | 66,960 | 4015,922 | 4,483,416 | 150, 508, 275 |
| 1960. | 191 | 212,859 | 78,115 | 418,104 | 4,628,911 | 157,151,527 |
| 1981. | 171 | 164,467 | 66,878 | 407,474 | 4, 473,699 | 158, 637, 366 |
| 1962 | 186 | 159,492 | 54, 805 | 400,292 | 4,178, 396 | 156,318,794 |
| 1983. | 132 | 159,473 | 55,211 | 400,885 | 4, 003, 127 | 151,118,045 |
| 1964. | 59 | 139,959 | 57,844 | 412,879 | 3, 835,454 | 144,788,388 |
| 1965p. | 185 | 112,786 | 46,878 | 452,000 | 3,608,348 | 136,142,989 |

Uranium.-The uranium industry suffered its sixth consecutive annual decline in output in 1965. Total shipments were $8,615,000 \mathrm{lb}$. of uranium oxide ( $\mathrm{U}_{3} \mathrm{O}_{8}$ ) compared with the peak production of $31,784,000 \mathrm{lb}$. in 1959 and value of shipments at $\$ 64,300,000$ was less than one fifth of the peak year's value. Four uranium mines operated in 1965 but one, Stanrock Uranium Mines Limited, is a small producer that treats only mine water for recovery of uranium. About 79 p.c. of 1965 shipments came from three mines in the Elliot Lake camp in Ontario-Stanrock Uranium Mines Limited, Denison Mines Limited, and Rio Algom Mines Limited's Nordic mine-and the remainder came from Eldorado Mining \& Refining Limited's Beaverlodge mine in northern Saskatchewan.

The Canadian Government announced in June 1965 that it was prepared to purchase uranium from companies that had previously produced uranium. Purchases would be made up to maximum stipulated quantities for a period of five years from July 1, 1965, at a price of $\$ 4.90$ a pound of $\mathrm{U}_{3} \mathrm{O}_{8}$. The program would allow companies to maintain their mines and plants in a condition to meet the expected production challenge of the future and permit the industry to produce for the next five years at rougbly $8,000,000 \mathrm{lb}$ a year.

Also, in June 1965 the Government announced that from then on it was prepared to grant export permits with respect to sales of uranium only if the uranium is to be used solely for peaceful purposes, except for material still to be shipped under existing contracts. Before such sales are authorized, Canada requires an agreement with the government of the importing country to ensure, with appropriate verification and control, that the uranium is to be used for peaceful purposes only. This policy allows Canadian producers to supply uranium for reactors that are already in operation, under construction, or firmly committed for construction in other countries for the anticipated life of each reactor. In addition, the Government is prepared to authorize the export, for periods of up to five years, of reasonable quantities of uranium for the accumulation of inventory in the importing country.

Sales of small quantities of uranium, up to a maximum of $2,500 \mathrm{lb}$. in total for a country, may be made to countries not holding agreements for the peaceful uses of atomic energy. All sales whether made by the Crown corporation, Eldorado Mining and Refining Limited, or by private producers are subject to control measures administered through the Atomic Energy Control Board.

Both Eldorado and Stanrock produced mainly to meet the contracts Canada holds with the United States Atomic Energy Commission and the United Kingdom Atomic Energy Authority. Denison completed its commitments with those agencies in June 1965 and then began deliveries under the new Canadian Goverament stockpile program. Rio Algom had organized its contract deliveries to enable it to produce for the agencies until October 1971 but the Government program permitted the company to deliver additional volumes of uranium to stockpile, which will increase its efficiency of operation.

In November 1965, Rio Algom acquired from Dow Chemical of Canada Limited the latter's 50 -p.c. interest in the capital of Rio Tinto Dow Limited and then changed the name of the new wholly-owned subsidiary to Rio Tinto Nuclear Products, Limited with plans to construct a 150 -ton-a-year uranium refinery at the Nordic mine site. Rio Algom visualizes savings in producing uranium fuel products, which are now produced in Canada only by Eldorado, since it will be possible to commence production of bigher grade products from the uranium while it is still in solution in the mill circuit.

The uranium industry has been encouraged by the unparalleled increase in the number of commitments to build nuclear power plants in several countries. Canada's own nuclear power program was marked by the official opening of the Pickering, Ont., reactor site where the first two $500-\mathrm{MWe}$ units of a contemplated eight-unit plant will be built for The Ontario Hydro Electric Power Commission. In May 1965 it was announced that consideration was being given by Hydro-Quebec to the construction of a $250-\mathrm{MWe}$ nuclear power plant. Another highlight of 1965 was the completion of a research reactor (WR-1) in November at the new Whiteshell Nuclear Research Establishment, Pinawa, Man. Meanwhile, Canada's first nuclear power station, located at Rolphton, Ont., continued to operate successfully and the opening of the 200 -MWe Douglas Point plant, which was scheduled for the autumn of 1965, was delayed until late 1966 or early 1967.

Canada has reserves of 210,000 tons of $\mathrm{U}_{3} \mathrm{O}_{8}$ that can be recovered in a price range of $\$ 5$ to $\$ 10$ a pound of $\mathrm{U}_{3} \mathrm{O}_{8}$. These reserves constitute one third of the western world total.
15.-Quantity and Value of Producers' Shipments of Uranium ( $\mathrm{U}_{3} \mathrm{O}_{8}$ ), by Province, 1956-65

| Year | Ontario |  | Saskatchewan |  | Northwest Territories |  | Canada |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity ${ }^{1}$ | Value | Quantity ${ }^{\text {I }}$ | Value | Quantity ${ }^{\text {l }}$ | Value | Quantity ${ }^{\text {l }}$ | Value |
|  | lb. | 8 | lb. | \$ | lb. | \$ | 1 b. | \% |
| 1956. | 908, 814 | 9,381, 867 | 2,780,534 | 27,194,202 | 873,912 | 9,176,076 | 4,561,060 | 45,732,145 |
| 1957 | 7.970,598 | 82,940,763 | 4,462,552 | 44,561,832 | 838,264 | 8,801,769 | 13, 271, 414 | 136, 304, 364 |
| 1958. | 19, 970,136 | 210,149,700 | 5,924,253 | 59,815,924 | 910,843 | 9,572,847 | 26, 805,232 | 279,538,471 |
| 1959. | 25,492,171 | 268,529,893 | 5.372, 685 | 54,457,321 | 919,333 | 8,155,729 | 31,784, 189 | 331,143,043 |
| 1960. | 19,793,727 | 211,983,533 | 4, 624, 431 | 48,722,961 | 1,077,211 | 9,231,698 | 25,495,369 | 269,938,192 |
| 1961. | 14,970,594 | 151,080,610 | 4,310,871 | 44,631,014 | - | - | 19,281,465 | 195,691,624 |
| 1962. | 12,805,203 | 118,283,081 | 4,053,966 | 39,900,588 | - | - | 18,859,169 | 158, 183,669 |
| 1963. | 12,770,421 | 102,951,146 | 3,932,615 | 33,957,973 | 二 | $\cdots$ | 16,703,066 | 136,909,119 |
| 1964. | 11,805,143 | $63,703,944$ | 2,765,164 | 19,002,485 |  | - | 14,570,307 | 83,509,429 |
| 1965 P. | 6,800,000 | 49,200,090 | 1,815,600 | 15, 100,000 | - | - | 8,615,000 | 64,300,000 |

[^183]Silver.-With recovery of silver commencing at two new base metal mines in 1965 and several other producers completing their first full year of operation, Canada's mine output at $32,964,299$ oz.t. was more than $3,000,000$ oz.t. greater than in 1964 . Declines in production in Nova Scotia, Manitoba, British Columbia and Yukon Territory were more than offset by increases in the Northwest Territories and the other provinces. Output in the Northwest Territories reached an all-time high as a result of the substantially increased production by Echo Bay Mines Limited. Canadian production in 1965 was valued at $\$ 46,117,054$, or more than $\$ 4,000,000$ higher than the previous year. Base metal ores accounted for 80 p.c. of the total, almost 19 p.c. came from silver-cobalt ores mined in northern Ontario and the remainder from lode and placer gold ores. Reported consumption of silver in Canada reached a record $30,170,097 \mathrm{oz}$,t. in 1965, mainly because of a large increase in the amount used in coinage; the latter was almost double the amount so used in 1964.

Canada's two largest producers of refined silver were: Canadian Copper Refiners Limited at Montreal East, Que., which recovered $9,600,000$ oz.t. from the treatment of anode and blister copper, and Cominco Limited at its refinery at Trail, B.C., which recovered $6,400,000$ oz.t. in the processing of lead and zine ores and concentrates. The remainder of the output of refined silver was produced by Cobalt Refinery Limited in the
processing of silver-cobalt ores and concentrates at its plant at Cobalt, Ont.; by International Nickel at Copper Cliff, Ont., in the treatment of nickel-copper concentrates; by Hollinger Consolidated Gold Mines, Limited at Timmins, Ont., from gold precipitates; and by the Royal Canadian Mint at Ottawa, from gold bullion.

The two largest sources of silver in Canada are the Hector-Calumet, Elsa, Keno and Silver King silver-lead-zinc mines in the Yukon Territory about 200 miles north of Whitehorse, operated by United Keno Hill Mines Limited, and the Sullivan lead-zine-silver mine at Kimberley, B.C., operated by Cominco Limited. Other important producers of byproduct silver included Echo Bay Mines Limited near Port Radium, N.W.T.; Hudson Bay Mining and Smelting Co., Limited at Flin Flon, Man.; Noranda Mines Limited (Geco Division) at Manitouwadge, Ont.; Lake Dufault Mines, Limited near Noranda, Que.; Brunswick Mining and Smelting Corporation Limited near Bathurst, N.B.; and American Smelting and Refining Company (Buchans Unit) in Newfoundland. Some 6,100,000 oz.t. of silver were derived from silver-cobalt ores mined in the Cobalt and Gowganda areas of Ontario, the largest producer being Silverfields Mining Corporation Limited with an output exceeding $1,000,000$ oz.t.

## 16.-Producers' Shipments of Silver, by Province, and Total Value, 1956-65

Nore-Figures from 1887 are given in the corresponding table of previous Year Books beginning with the 1916.17 edition.

| Year | Average <br> Price per 02.t. <br> (Cansdian funds) | Newfoundland | Nova Scotia | New Brunswick | Quebec | Ontario | Manitoba |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | cts. | oz.t. | oz.t. | oz.t. | oz.t. | oz.t. | oz.t. |
| 1958. | 89.67 | 957.125 | 92,859 | 18,182 | 4,053.966 | 6,626,447 | 430.124 |
| 1957. | 87.87 | 1,196,414 |  | 379, 173 | 3,645,856 | 6,910,130 | 407,884 |
| 1958. | 86.81 | 1,287.078 |  | 51,139 | 3,908, 3:1 | 9,815,257 | 320.759 |
| 1959. | 87.78 | 1,125,110 |  |  | 4,108,241 | 10,540,856 | 373,827 |
| 1960... | 88.91 | 1,271,126 | - | - | 4,115,105 | 11,220, 823 | 501,637 |
| 1961. | 94.28 | 1,145, 105 |  | - | 4,315,844 | 8,870,402 | 767,543 |
| 1962. | 116.50 | 1,181,648 | 724,245 | 178, 521 | 4, 003,019 | 9,383,445 | 847.879 |
| 1963 | 138.40 | 981,005 | 423,189 | 332,472 | 4. 141,644 | 9,001,621 | 766,976 |
| 1964. | 140.00 | 1,089,748 | 544,224 | 1, 169.192 | 4,564,559 | 9,929,858 | 727,642 |
| 1965 p. | 139.40 | 1,127,980 | 400,000 | 2,914, 000 | 5,315, 163 | 11,203,506 | 697.389 |
|  |  |  |  |  | orthuest |  | da ${ }^{1}$ |
|  |  |  | Columbia | Territory | - | Quantity | Value |
|  |  | 02.t. | oz.t. | oz.t. | 02.t. | oz.t. | \% |
| 1956 |  | 1,179,110 | 8,801,398 | 6, 192, 703 | 69,816 | 23,431,847 | 25,497, 881 |
| 1957 |  | 1.145.571 | 8,584, 991 | B, 434, 185 | 69,104 | 28,823,298 | 25.182.915 |
| 1958. |  | 1.299 .077 | $8,013,428$ | 6,415,560 | 72,779 | 31,163,470 | 27,053,007 |
| 1959 |  | 1,187, 439 | $7,468,285$ | 7,054, 832 | 70,580 | 31,923,969 | 28.022,860 |
| 1980. |  | 1,163,845 | 8,447,440 | 7,217,361 | 79,473 | 31,016,829 | 30,244,363 |
| 1961 |  | 876,450 | 8,391, 840 | 6,937,086 | 77,890 | 31,381,977 | $20.580,651$ |
| 1962. |  | 762,215 | 6,186,937 | 6,482,241 | 72,802 | 30,422,972 | 35,442,761 |
| 1963. |  | 746,683 | 6,461,158 | 6,109,037 | 81,203 | 29,932,003 | 41, 125,891 |
| 1964 |  | 593,320 | 5,280,129 | 5, 6888,712 | r 65,223 | 29, 902,611 | 41, ${ }^{46}$ |
| 1965p. |  | 685,130 | 4,851,193 | 4,485,121 | 1,274,200 | 32,964,299 | 46.117,054 |

${ }^{1}$ Includes relatively small quantities prodeced in Alberta.
Platinum Metals.-Canadian production of the platinum metals in 1965 amounted to $\mathbf{4 5 2 , 0 6 3} \mathrm{oz}$. t. valued at $\$ 35,678,078$, an increase of $\mathbf{7 5 , 8 2 5} \mathrm{oz}$.t. and $\$ 10,273,961$ over 1964 . The inerease resulted from higher nickel production. Platinum group metals-platinum, palladium, rhodium, ruthenium, iridium and osmium-occur in Canadian nickel ores to the extent of about 0.025 oz.t. per ton of ore. In the treatment of these ores for nickel, the platinum metals follow nickel and are eventually removed as sludges from the electrolytic tanks in which nickel cathodes have been formed. The sludge is purified and sent to precious metal refineries in Britain and the United States for recovery of the platinum metals.

Worid markets for platinum metals were very strong in 1965. Demand in the western world outpaced supply and the extra metal had to be purchased from the Soviet Union. Half of the world's output is produced in the Soviet Union and most of the remainder in the Republic of South Africa and Canada. An erratic pattern of sales to the western world by the Soviet Union caused a wide difference between the official platinum price of about $\$ 100$ an $\mathrm{oz} . \mathrm{t}$. and the free market price of up to $\$ 180 \mathrm{an} \mathrm{oz.t}$.

Aluminum.-As a producer of aluminum metal, Canada ranks second, after the United States, in the non-communist world. At the end of 1965 Canadian smelting capacity was 913,000 tons a year. Plants of the Aluminum Company of Canada, Limited (Alcan), locsted at Arvida, Alma, Shawinigan and Beauharnois in Quebec and at Kitimat in British Columbia, have a capacity of 808,000 tons; a further 24,000 tons of capacity will be completed at Kitimat in 1966. Alcan production was 728,400 tons in 1965. Canadian British Aluminium Company Limited operates a smelter at Baie Comeau, Que., having an estimated capacity of 105,000 tons a year; a plant addition and renovations will increase capacity to 175,000 tons by 1969-70. Canadian production of primary aluminum in 1965 was 840,348 tons, of which 707,512 tons were exported. Output in 1966 is expected to be about 910,000 tons. As all bauxite and alumina used by the aluminum smelters must be imported, mainly from the Caribbean area, metal production is classed in official statistical data with manufactures and not with smelter production of ores and metals of domestic origin. The export price of primary aluminum was 24.5 cents (U.S.) a pound throughout 1965 and to mid-1966. The Canadian price was 26.0 cente a pound.

Cobalt.-Cobalt production in 1965 was $3,798,740 \mathrm{lb}$. valued at $\$ 8,205,278$, considerably higher in both quantity and value than in the previous year. Cobalt is derived as a by-product of the smelting and refining of nickel-copper ores of Sudbury, Ont., and Lynn Lake, Man.; from nickel ores of Thompson, Man.; and from silver ores of Cobalt, Ont. International Nickel recovers cobalt from its refinery operations at Port Colborne, Ont., Thompson, Man., and Clydach, Wales. Falconbridge Nickel produces electrolytic cobalt in the refining of nickel-copper matte exported to its refinery at Kristiansand, Norway. Sherritt Gordon recovers cobalt as a by-product at its nickel refinery at Fort Saskatchewan, Alta. Cobalt Refinery Limited at Cobalt, Ont., recovers black cobalt oxide and mixed cobalt and nickel oxide from silver concentrates.

Columbium.-In 1965, mine production of St. Lawrence Columbium and Metals Corporation, the only Canadian producer of columbium concentrates, amounted to $2,300,000 \mathrm{lb}$. of contained $\mathrm{Cb}_{2} \mathrm{O}_{\mathrm{s}}$ in pyrochlore concentrates valued at $\$ 2,350,000$. The mine is near the town of Oka, 20 miles west of Montreal. Quebec Columbium Limited and Columbium Mining Products Limited also own large pyrochlore deposits in the Oka area. Masterloy Products Limited, Ottawa, Ont., is the only Canadian manufacturer of ferrocolumbium, which is sold in Canada and the United States.

Magnesium.-At the end of 1965, Dominion Magnesium Limited, the sole producer of magnesium in Canada, had a production capacity of 11,500 tons a year. The smelter at Haley, Ont., contains the largest installation of vacuum equipment in the world. The recovery process involves calcining an exceptionally pure dolomite quarried near the smelter, mixing the calcine with ferrosilicon from Beauharnois, and reducing the mixture in special retorts under vacuum at high temperature. Production was $\mathbf{1 1 , 1 3 3}$ tons in 1965. Much of the output is exported to Britain and West Germany. Canadian consumption of primary magnesium, including $1,64 \mathrm{I}$ tons of imports, was 4,473 tons in 1965. Free World production in 1965 was estimated at 170,500 tons.

Molybdenum.-Molybdenum production in 1965 amounted to $9,691,220 \mathrm{lb}$. valued at $\$ 16,759,950$. Approximately $2,200,000 \mathrm{lb}$. of the molybdenum produced was converted, by roasting, to molybdic oxide $\left(\mathrm{MoO}_{2}\right)$, some of which was converted to ferromolybdenum; the remainder of the production was exported in molybdenite ( $\mathrm{MOS}_{2}$ ) concentrates.

Canadian production in 1965 came from four mines in Quebec and three in British Columbia. Quebec producers were the Lacorne mine of Molybdenite Corporation of Canada Limited near Val d'Or; the mines of Preissac Molybdenite Mines Limited and of Anglo-American Molybdenite Mining Corporation, both in the Lake Preissac area just north of Cadillac; and the Murdochville mine of Gaspe Copper Mines Limited. The first three mine molybdenite as a primary product and recover bismuth as a by-product; the Murdochville mine is a copper operation and molybdenite is recovered as a by-product. In British Columbia, Brynnor Mines Limited (Boss Mountain) and Endako Mines Limited are primary producers of molybdenite; Red Mountain Molybdenum Mines Ltd. (Torwest) and British Columbia Molybdenum Limited (Alice Arm), with mine development under way, will be primary producers; Bethlehem Copper Corporation Limited recovers molybdenite as a by-product from copper ores mined near Ashcroft, in the Highland Valley.

Molybdenite Corporation, Preissac and Endako all operate roasting facilities to produce molybdic oxide at their mine sites; Masterloy Products Limited operates roasting facilities at Duparquet, Que. Masterloy and Preissac also produce ferromolybdenum, Preissac at its mine site and Masterloy at its plant near Ottawa.

Selenium and Tellurium.-Selenium production in 1965 , totalling $504,109 \mathrm{lb}$. valued at $\$ 2,435,704$, was 8 p.c. higher than in 1964 ; tellurium output at $86,264 \mathrm{lb}$. valued at $\$ 554,793$ was 10 p.c. higher. These metals are recovered from the anode muds resulting from the electrolytic refining of copper at the plants of Canadian Copper Refiners Limited at Montreal East, Que., and International Nickel at Copper Cliff, Ont.

Titanium.-Ilmenite, an iron-titanium oxide, is mined in the Allard Lake and St. Urbain areas of Quebec. The Allard Lake ore, mined by Quebec Iron and Titanium Corporation, is smelted by the company in electric furnaces at Sorel, Que., to produce high-titania slag and pig iron. The slag is sold to producers of titanium-based pigments in Canada, the United States, Britain, Japan and other countries. Ilmenite mined at St. Urbain by Continental Titanium Corporation is used as heavy aggregate in weighting oil and gas transmission pipelines and in shielding nuclear reactors. The value of titaniumbearing materials shipped in 1965 as ore, heavy aggregate and titanium-bearing slag was at an all-time high of $\$ 22,425,094$, compared with $\$ 21,270,144$ in 1964 .

Tungsten.-Tungsten production in 1965 was approximately $3,000,000 \mathrm{lb}$., all from Canada Tungsten Mining Corporation Limited whose mine is just east of the YukonNorthwest Territories boundary and 135 miles north of Watson Lake. This is one of the highest grade tungsten deposits in the world and its production moved Canada into third place, following the United States and South Korea, among the non-communist producers.

Vanadium.-Canadian Petrofina Limited recovers vanadium pentoxide ( $\mathrm{V}_{2} \mathrm{O}_{5}$ ) at its refinery at Pointe aux Trembles, Que. The capacity of this plant, which started operations in 1964 and is the only vanadium-recovery facility in Canada, will be increased in 1966 from 500 lb . of $\mathrm{V}_{2} \mathrm{O}_{5}$ a day to $1,000 \mathrm{lb}$. a day.

## Subsection 2.-Industrial Minerals

The total value of industrial minerals produced in Canada continued its upward trend in 1965. Producers' shipments of non-metallic minerals were valued at $\$ 311,000,000$ and of clay products and other structural materials of mineral origin at $\$ 423,000,000$ for a grand total of $\$ 734,000,000$, approximately 7 p.c. above 1964. Production records were established for a number of minerals including cement, nepheline syenite, potash, salt, silica, sodium sulphate and sulphur; however, production of several of the larger tonnage minerals, notably asbestos, gypsum, stone, and sand and gravel, was slightly below 1964 levels. Highlights of the more important developments during the year are reviewed below.

Asbestos.-Following six years of successive increases, the 1965 output of asbestos in Canada dropped almost 3 p.c. below that of the previous year to $1,380,210$ tons valued at $\$ 140,000,000$; production in Quebec, which produces about 90 p.c. of the total, and Ontario was lower but that in Newfoundland increased 10 p.c. and that in British Columbia 26 p.c. Although the demand for most grades remained good during the year, Canadian asbestos is experiencing competition with fibre from other countries, including the Soviet Union, especially in overseas markets. Production in Russia is now estimated to be slightly abead of Canadian output. The traditional source of asbestos in Russia has been from deposits at Sverdlovsk but two other sources being developed will increase substantially the production potential of and presumably the exports from that country. Mainly because of the expansion of the Russian industry, Canadian production has been growing at a lower rate than world output and in 1965 accounted for only 39 p.e. of the estimated $3,500,000-$ ton world total.

Asbestos Corporation Limited is proceeding with the development of a large asbestos deposit at Asbestos Hill, 40 miles south of Deception Bay in the Ungava area of Quebec, at an estimated cost of $\$ 50,000,000$. It is expected that this property will be brought into production in 1970 with a capacity of 100,000 tons of fibre per annum. Ore reserves exceed $20,000,000$ tons.

Yukon Territory may soon join the ranks of asbestos producers. Cassiar Asbestos Corporation is preparing the Clinton Creek deposit for operation in 1968. It is located 40 miles northwest of Dawson and is expected to produce 40,000 tons of ibre per annum. Ore reserves are estimated to exceed $12,000,000$ tons. In British Columbia, exploratory work is continuing on the Kutcho Creek property, 60 miles southeast of the Cassiar mine. In Ontario, an asbestos deposit in Reeves township, 40 miles southwest of Timmins, is under development. Canadian Johns-Manville Company has in hand an underground exploration program to prove up this interesting occurrence. The only production of asbestos recorded in Ontario in 1965 was from Hedman Mines Ltd., east of Matheson.

Recently there has been considerable interest in the development of new uses for asbestos. The addition of short-fibre asbestos to asphalt road-paving mixtures is reported to reduce cracking of the road surface and lengthen the pavement life; a project at the University of Florida has indicated that heat-resistant paper can be made from a mixture of asbestos and other inorganic fibres and Union Carbide Corporation has developed a special grade of asbestos from its California operation that is reported to be an effective addition to cellulose sulphite pulp in conventional paper-making.

## 17.-Quantity and Value of Producers' Shipments of Asbestos, 1956-65

Nowi.-Figures from 1890 are given in the corresponding table of previons Year Books beginning with the 1911 edition.

| Year | Quantity | Value | Year | Quantity | Value |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | tons | \$ |  | tons | \$ |
| 19.56. | 1,014,249 | 99,859,960 | 1961. | 1,173,695 | 128,955,900 |
| 1957. | 1,046,086 | 104,489,431 | 1962. | 1,215,814 | 130,281,966 |
| 1958. | -925,331 | 82,276,748 | 1963. | 1,275,530 | 136,956, 180 |
| 1989. | 1,050,429 | $107,433,344$ $121,400,015$ | ${ }_{19659} 196$. | 1, 419,851 | 145,193,443 |
|  | 1,118,450 | 121,400,015 |  | 1,380,210 | 139,805,322 |

Potash.-Potash mining is a recent development in Canada, the first output being recorded in 1962, valued at $\$ 3,000,000$. By 1965, the three Canadian producers in Saskatchewan had a total productive capacity of $1,820,000$ tons of $\mathrm{K}_{2} \mathrm{O}$ a year and produced $1,430,000$ tons valued at $\$ 54,000,000$, although all three were not in operation for the full year and one plant was expanded late in the year.

During 1965, potash mine development was under way by six companies. Four shafts were being sunk, preliminary drilling of freeze holes was under way for six other shafts, two refineries were under construction and four additional refineries were being designed. Start of development by two, and possibly more, companies is expected in 1966. These projects indicate a Canadian potash productive capacity of $2.500,000$ tons of $\mathrm{K}_{2} \mathrm{O}$ in $1968,7,000,000$ tons in 1970 , and $9,000,000$ tons in 1975 , although this achievement will depend on the successful meeting of the construction schedules laid out as well as on continued strength in potash markets. World potash consumption increased more than 10 p.c. in 1965, a rate much higher than normal, to set a new demand peak and, despite high rates of production throughout the world, shortages occurred in some areas and prices increased slightly. Although future markets cannot be guaranteed, there is good reason to believe that demand for all fertilizer materials will continue to increase at a higher rate than the average of the past 20 years. The enormous reserves of high-grade ore available in Saskatchewan assure producers of a dominant place in the world potash industry.

Salt.-The output of salt continued its upward trend in 1965, reaching a high point in quantity. All producing provinces recorded increases but Ontario continued to account for 84 p.c. of the total tonnage. Rock salt is mined in Nova Scotia and Ontario; brine wells are operated in Nova Scotia, Ontario, Manitoba, Saskatchewan and Alberta. It is of interest to note that salt is also a by-product of the potash operations in Saskatchewan, more than one ton of salt being produced for every ton of refined potash. By 1970, when potash production is expected to approach $12,000,000$ tons of product (KCI) annually, the rate of production of by-product salt will probably exceed $18,000,000$ tons. However, major markets for this material are lacking; although research into utilization in road and soil stabilization programs is under way and small quantities are used for ice control during winter months, large tonnages will continue to accumulate at increasing rates as new potash mines are developed and brought into production.

## 18.-Producers' Shlpments of Salt, by Province, and Total Value, 1556-65

Nore.-Figures from 1926 are civen in the corresponding table of previous Year Books beginning with the 1946 edition.

| Year | Nova Scotia | Ontario | Manitobs | Saskatchewan | Alberta | Canads |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | Quantity | Value |
|  | tons | tons | tons | tons | tons | tons | \$ |
| 1958 | 132.539 | 1,347,729 | 21,068 | 42,814 | 48,654 | 1,590,804 | 12,144,476 |
| 1987 | 122,763 | 1, 538,805 | 19,372 | 43,684 | 46,935 | 1,771,559 | 13.989,703 |
| 1958. | 125.872 | 2,126,483 | 20.560 | 48,511 | 55,786 | 2+375,192 | 14.989,542 |
| 1959. | $120+225$ | 3,036,230 | 23,547 | 48,776 | 61,198 | 3,289,976 | 18, 034,522 |
| 1960. | 163.901 | 3,007,599 | 21,925 | 49,064 | 72,431 | 3,314,920 | 19,355,658 |
| 1961. | 225.875 | 2,861,705 | 23,103 | 51.964 | 83,880 | 3.246,527 | 19.552,006 |
| 1962. | 312.519 | 3,155,589 | 25,010 | 54,931 | 90,729 | 3, 638,778 | 21, 327.135 |
| 1963 | 356,902 | 3,187,491 | 24,883 | 56.301 |  |  |  |
| 1964. | 448,808 468,000 | $3,335,683$ $3,649,000$ | 27,744 30,700 | 74,952 77,000 | 101,411 | $3,988,598$ $4,331,100$ | $20,203.742$ $21,564,734$ |
| 1965 | 468,000 | 3,649,000 | 30.700 | 77,000 |  | 4,331,100 | 21,504,734 |

Sulphur.--"Sour" natural gas found in Alberta and British Columbia is the source of most of the elemental sulphur produced in Canada, other sources being smelter gas and pyrites. In all forms, sulphur production amounted to some $2,770,000$ tons, of which sour gas was the source of 69.0 p.c. and the others 18.5 p.c. and 12.5 p.c., respectively. During 1965 elemental sulphur was produced at 10 plants in Alberta and at one plant in British Columbia. Total shipments amounted to $1,908,000$ tons. A small amount of elemental sulphur is also produced at several oil refineries in Eastern Canada, where sour gas from refining processes is used as a source material.

Elemental sulphur productive capacity in Canada is now in excess of 2,500,000 tons a year and new capacity is expected to be in operation during 1966 and in later years. In addition to the normal sour gas sources, there are some very high concentrations of $\mathrm{H}_{2} \mathrm{~S}$ which will become sources of sulphur when production problems are solved. Also, production of oil from the Athabasea oil sand deposits in 1968 will contribute some 100,000 tons of sulphur annually.

World demand for sulphur is increasing and at present exceeds annual production. Shortages exist in some areas and prices have increased and may be forced to even higher levels to encourage the production of this essential element. Canada is now one of the major producers of elemental sulphur and occupies a strong competitive position in world markets because most of its production is a co-product of operations conducted for other purposes.
15.-Quantity and Value of Sulphur Produced from Smelter Gases and in Pyrite and Pyrrbotite Shipments, and of Elemental Sulphur Sales, 1956-65

| Year | Sulphur in Smelter Gases |  | Producers' Shipments Pyrite and Pyrrbotite |  |  | Sales of Elemental Sulphur ${ }^{1}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Qusantity | Value | Gross Weight | Sulphur Cortent | Value | Qusntity | Value |
|  | tona | \$ | tons | tons | \% | tons | \$ |
| 1956. | $236,088{ }^{2}$ | 2,323,590 | 1.046,740 | 473,605 | 4,538,785 | 34.784 |  |
| 1955. | 235.1232 | 2.322,067 | 1, 166,416 | 515.096 | 4,800,228 | 93,338 |  |
| 1958. | $241.055^{2}$ | 2.361,252 | 1.191,731 | 512,427 | 4,24.668 | 94,377 | 1,872,832 |
| 1959. | 277.030 $289,820^{2}$ | 2,716,416 | $1,099,564$ $1,032,288$ | $\cdots$ | $3,432,095$ $3,316,378$ | 145.656 274.359 | $2,620,787$ $4,298,906$ |
| 1961 | 277.0562 | 2,708,110 | 517,2583 | . | 1,830,566 | 394.762 | 7,287,881 |
| 1962. | 292, $728{ }^{2}$ | 3,089,537 | 517,3083. | $\ldots$ | 1,879,584 | 695.098 | 9,286,999 |
| 1963 | 353,243z | 3,488,181 | 476,4383, | . | 1,643,629 | 1,249,887 | 13,380,182 |
| 1984. | 443, $448{ }^{2}$ | 4,281.912 | $351,850{ }^{3}$ | .. | 1,126,167 | 1.788.165 | 18.337.597 |
| $1965{ }^{\circ}$. | $513,122^{2}$ | 5,055, 120 | 352,808 ${ }^{3}$ | .. | 1,889,226 | 1,907,723 | 23,481.947 |

[^184]${ }^{2}$ Includes sulphur in acid made from roasting *Ercludes pyrite and pyrrbotite used to produce

Gypsum.-Crude gypsum production continued at a high level in 1965 although, at $6,200,000$ tons, it was slightly below that of 1964 , the record year. Six provinces produce gypsum but about 77 p.c. of the total output is mined, mostly from open-pit operations, in Nova Scotia and is exported to gypsum product plants in the eastern United States.

In 1965 a new underground mine, the fourth in Canada, was brought into production by Western Gypsum Company near Silver Plains, 35 miles south of Winnipeg. This mine, which produces about 500 tons per day, is the chief source of crude gypsum for Western's gypsum products plant at Winnipeg; reserves are estimated at $20,000,000$ tons. Elsewhere in Western Canada, interest in gypsum is at a high level. A United States firm is conducting feasibility and market studies with a view to exploiting gypsum deposits along the banks of the Lussier River in southeastern British Columbia, deposits that are reported to contain over $100,000,000$ tons of good-quality gypsum. Interest is also being shown in the Peace River gypsum deposits of Wood Buffalo Park in northern Alberta. Under present legislation these deposits, being within a National Park, are not available to mining but negotiations are under way between the federal and provincial governments to transfer part of Wood Buffalo Park to the Province of Alberta with, perhaps, some easing of mining restrictions.

Although no new mining operations were established in Eastern Canada during the year, several companies were actively engaged in exploration programs in Nova Scotia.

## 20.-Producers' Shipments of Gypsum, by Province, and Total Value, 1956-65

Note.-Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1943-44 edition.

| Year | Newfoundland | Nova Scotia | New Brunswick | Ontario | Manitoba | British Columbia | Canada |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  | Quantity | Value |
|  | tons | tons | tons | tons | tons | tons | tons | \$ |
| 1956. | 37,000 | 4,144,147 | 86,104 | 366,956 | 185,986 | 75,618 | 4,895, 811 | 7,260,236 |
| 1957 | 29,465 | 3,842,027 | 93,249 | 379,621 | 183,708 | 49,422 | 4,577,492 | 7,745,105 |
| 1958. | 36,307 | 3,149,719 | 105,749 | 425,733 | 176,123 | 70,498 | 3,964,129 | 5,189,159 |
| 1959. | 37,720 | 5,036,411 | 98,250 | 412,100 | 200,139 | 94,010 | 5,878,630 | 8,393,703 |
| 1960. | 34,346 | 4,490,427 | 90,892 | 355,603 | 122,063 | 112,400 | 5,205,731 | 9,498,711 |
| 1961. | 40,699 | 4,113,188 | 85,330 | 425,287 | 122,233 | 153,300 | 4,940,037 | 7,750,748 |
| 1962 | 83,992 | 4,451,072 | 91,835 | 435, 140 | 122,870 | 147,900 | 5,332,809 | 9,349,775 |
| 1963. | 232,259 | 4,910,536 | 80,544 | 439,206 | 131,767 | 160,954 | 5,955, 266 | 11,237,952 |
| 1964 | 331,990 | 5,097,232 | 104,100 | 517,239 | 121,555 | 188,569 | 6,360,685 | 11,523,937 |
| 1965 D | 422,000 | 4,806,000 | 100,800 | 515,000 | 162,000 | 205,160 | 6,210,960 | 11,438,353 |

Sodium Sulphate.-Production of sodium sulphate (salt cake) from alkali lake basins in Saskatchewan has increased steadily from 157,800 tons in 1957 to 346,000 tons in 1965. Demand for sodium sulphate, mainly for use in the production of kraft paper, has increased and expansion in the kraft paper industry indicates further increases in consumption. Operations in Saskatchewan are at near-capacity; the five producing plants have a total output capability of about 400,000 tons a year. The construction of three new plants, located at Cabri, Alsask and Fox Valley in the southern portion of the province, will increase that capability by about 300,000 tons a year, with initial production scheduled for 1967.

Structural Materials.-To keep pace with the steadily upward climb of construction in Canada, which reached $\$ 9,900,000,000$ in 1965, the total output of structural materials recorded a new high in that year with a total value of $\$ 423,000,000$, a figure 5 p.c. above the previous record attained in 1964. The large production of cement is particularly significant.

The use of lightweight aggregates made from expanded clay and shales is gaining ground. Several multi-storey buildings have been erected in Toronto using lightweight structural concrete and the lightweight aggregate industry in Montreal is striving to gain a share of the local concrete aggregate market. The wider acceptance of pre-cast concrete exterior wall panels has created a greater demand for coloured rock chips for use in exposed aggregate applications with white cement mortar.

In addition to pre-cast structural elements, such as roof and floor planks, wall panels and pre-stressed girders and beams, which are now commonly used in building construction, complete prefabricated concrete housing units are being produced on assembly lines to facilitate the speedy erection of multi-storey housing blocks. A dramatic demonstration of the potential of such mass production in the building industry is the $\$ 13,500,000$ project of Habitat 67 in Montreal. The zig-zag complex will contain 158 dwelling units consisting of 354 pre-cast concrete boxes ( $38.5^{\prime} \times 17.5^{\prime} \times 10^{\prime}$ ) stacked, bolted and stressed together in a 12 -storey pyramidical structure. Fibreglass utility units-kitchens, washrooms, bathrooms and closets-are also prefabricated and installed complete within the concrete boxes.

Cement.-The production volume of the Canadian cement industry in 1965 amounted to over $8,400,000$ tons of portland cement, 7.4 p.c. above the 1964 output. Two new cement plants were completed during the year, adding $3,400,000 \mathrm{bbl}$. to the annual productive capacity: one, a $\$ 14,000,000$ plant with a capacity of $1,400,000 \mathrm{bbl}$. of cement a year, is located at Brookfield, N.S., and is operated by Maritime Cement Company, a subsidiary of Canada Cement Company Limited; the other is the $\$ 16,000,000$ Tuxedo plant of the Inland Cement Company, located at Winnipeg, Man. Expansions totalling
about $\$ 27,000,000$ were carried out on existing facilities: by addition of another kiln, the Villeneuve, Que., plant of the St. Lawrence Cement Company and the Picton, Ont., plant of Lake Ontario Cement Limited each doubled production capacity; also, about 2,000,000 bbl. of capacity was being added by the installation of a second kiln at the Montreal plant of Miron Company. The two new plants and the expansion of existing plant raised the annual rated capacity of the industry to $67,500,000 \mathrm{bbl}$. of portland cement at the end of 1965 , an increase of 18 p.c. over rated capacity at the end of 1964 . Plant expansions for completion in 1966 include the addition of a $1,000,000-b b l$. kiln at Canada Cement's Havelock, N.B., plant, which will double its capacity; a new $\$ 5,500,000$ clinker-grinding mill at Floral near Saskatoon, Sask.; and a new Independent Cement Inc. plant at Joliette, Que., with an annual production capacity rated at $2,500,000 \mathrm{bbl}$.

Other additions to the industry are planned for the near future: a $\$ 35,000,000$, $3,000,000-\mathrm{bbl}$. integrated plant of the Lafarge Cement Quebee Ltd., at St. Constant, a few miles south of Montreal; the addition of a $3,250,000-\mathrm{bbl}$. kiln to the Woodstock, Ont., plant of the Canada Cement Company, which will raise its rated annual capacity to about $6,500,000$ bbl.; expansion by the St. Lawrence Cement Company of its plant at Clarkson, Ont., by the addition of a new kiln and the installation of some most unusual and original machinery, which will raise the annual rated capacity of this plant to $10,000,000 \mathrm{bbl}$ by the end of 1967 and make it the largest cement manufacturing plant in Canada; and the installation of a new kiln by Ocean Cement Limited at their Bamberton plant on Vancouver Island, raising its annual rated capacity to $4,800,000 \mathrm{bbl}$. Thus, the annual rated capacity of domestic plants by the end of 1967 will be about $85,000,000 \mathrm{bbl}$., an increase of about 26 p.c. over the industry's capacity scheduled for 1966 .

There is a trend toward the use of white cement in building designs; although none is being manufactured in Canada, some is ground here from imported white cement clinker.

## 21.-Producers' Shipments and Value, Imports, Exports and Apparent Consumption of Cement, 1950-65

Nors,-Figures from 1910 are given in the corresponding table of previous Year Books beginning with the 1939 edition.

| Year | Shipments(sold or used) |  | Imports ${ }^{1}$ | Exports | Apparent Consumption ${ }^{\text {* }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | tons | \$ | tons | tons | tons |
| 1956. | 5.021 .683 | 75,233.321 | 677.616* | 124,561 | 5,574,738 |
| 1957. | 6.049,098 | 93, 167.477 | 92.380 | 338,316 | 5,803.162 |
| 1958. | 6,153,421 | 96,414, 142 | 41.550 | 141, 250 | 6. 053.721 |
| 1959. | 6,284,486 | 95,117.798 | 29,256 | 303126 | 6, 010.618 |
| 1960. | 5,787,225 | 93,261,473 | 22,478 | 181,117 | 5,628,586 |
| 1081. | 6,205,948 | 103,923,644 | 1,381 | 249,377 | 5, 957,952 |
| 1962. | 6,878,729 | 113,233, 726 | 2,973 | 219, 184 | 6.682,538 |
| 1983. | 7.013,662 | 118,614, 929 | 160 | 272,803 | 6.741, 019 |
| 1984. 19650 | 7,847,384 | 130,704, 220 | 250 | $297+669$ 334887 | 7.549,965 |
| 1965 D. | 8,426,971 | 144,582, 127 | 90 | 334,887 | 8,092,174 |

[^185]${ }^{2}$ Shipments plus imports less exports.

- Includes imported clinker,

Sand and Gravel.-Deposits of sand and gravel are numerous throughout Eastern Canada, with the exception of Prince Edsard Island where gravels are scarce. The local needs for these materials are usually supplied from the nearest deposits as their cost to the consumer is governed largely by the length of haul. This accounts for the large number of small pits and the small number of large plants in operation. Every province except New Brunswick and Prince Edward Island produces natural bonded sand but some grades particularly suitable for certain industries command much higher prices than ordinary sand. The greater part of the sand and gravel output is used in road improvement, concrete works or as railway ballast, and most of the commercial plants are equipped for producing crushed gravel, a product that can compete with crushed stone. Shipments in 1965 were slightly lower than in 1964 , although they were valued about $\$ 4,000,000$ higher.
22.-Producers' Shipments of Sand and Gravel, by Province, and Total Value, 1956-65

| Year | New. foundland | Prince <br> Edward <br> Island | Nova Scotia | New <br> Brunswick | Quebee | Ontario |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | tons | tons | tons | tons | tons | tons |
| 1856. | 2,490,580 |  | 1,675,458 | 6. 140.029 | 37,175,708 | 61,436.363 |
| 1957 | 2.798 .273 |  | 1,983,070 | 7,342,988 | 40.913,961 | 68, 129,158 |
| 1958 | 4, 062,985 |  | 2,333,792 | 4.015 .976 | 40,597,787 | 67,469,064 |
| 1959. | 4,825,724 | 5 +244,968 | 8,032,122 | 5.093.496 | 42,449, 734 | 73, 981,703 |
| 1960. | 3,912,533 | 474,184 | 8,717.693 | 6, 184,924 | 46,255,963 | 77,660, 833 |
| 1961 | 3,383,724 | 544.497 | 5,574,377 | 5,014,284 | 44, 128, 199 | 70,208,199 |
| 1962 | 4,250,942 | ${ }^{531,196}$ | 4,375,842 | 5.128,365 | 44,000,000 | 76,600,813 |
| 1963 | 4,640,993 | 629,475 | 6, 833,581 | 4,417,611 | 42,375,911 | 80+259.750 |
| 1964 | 4.657,737 | 608.923 | 6,562.341 | 4,699,626 | 44,500,000 | 76,917,396 |
| 19650 | 4.590.194 | 526,850 | 6,505.874 | 5,141,543 | 44,000,000 | 77,813,712 |
|  | Manitoba | Saskat- | Albert | Britis |  |  |
|  |  | chewa |  | Columbia | Quantity | Value |
|  | tons | tons | tons | tons | tons | \$ |
| 1956 | 6,883,026 | 6, 4666.810 | 10.522,441 | 16,010,853 | 148,801,268 | 81.957,352 |
| 1957 | 6.647,280 | 6,565,563 | 11,801, 422 | 15,699.857 | $159,829,512$ | 91.939,354 |
| 1958. | 9,997, 546 | 5,380, 151 | 13, 228,668 | 12,216, 178 | 160.210,945 | 98, 288, 363 |
| 1959. | 9,261,553 | 5.898, 136 | 13, 271.695 | 17,064.615 | 185, 123.746 | 104,651.461 |
| 1960. | 10,860,566 | 8.952,539 | 13,385,970 | 15,669,293 | 192,074,498 | 111,163, 888 |
| 1961 | 7.402,385 | 7.626.197 | 12,591.944 | 14,279. 191 | 170,750,947 | 104, 654,132 |
| 1982 | 9,692,025 | 5,317,336 | 13,469, 848 | 17,879.393 | 181,245,782 | 118, 603, 283 |
| 1963. | 9,653.471 | 7.368.017 | 16.139.744 | 17,451.950 | 189, 570,503 | 123,854, 254 |
| 1964. | 9,871.883 | 9,266,648 | 16,777.687 | 19,929, 117 | 193, 791,358 | 125, 232,132 |
| 1965p | 9.780.627 | 8,980.463 | 14, 858,291 | 20,859,821 | 192,857,375 | 129.329.647 |

Stone.-The stone industry in Canada has two main divisions-stone quarrying and the stone products industry. The granite, limestone, marble, sandstone and slate quarries yield high-grade structural and decorative materials and also supply requirements for chemical and other allied industries but the major part of the tonnage produced is crushed stone. Shipments in 1965 continued the upward trend in evidence over the past ten years.
23.-Producers' Shipments of Stone, ${ }^{1}$ by Profince, and Total Value, 1956-85

| Year |  | Newfoundland | Prince Edward Island | Nova Scotia | New Brunswick | Quebec |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | tons | tons | tons | tons | tons |
| 1956 |  | 327.943 | . | 408.952 | 2,129.109 | 11, 153,206 |
| 1957 |  | 348,373 | $\ldots$ | 434,726 | 1.285,811 | 16,053, 665 |
| 1958. |  | 282,439 |  | 435,047 | 2,100.687 | 16,963,511 |
| 1959. |  | 352,231 | 1,700,000 | 1,393,668 | 2,119. 136 | 20,437,243 |
| 1960. |  | 380.843 | 750,000 | 914,937 | 1,883,867 | 20,394,509 |
| 1961. |  | 322,820 | 225,000 | 1,021,880 | 2,957,886 | 22,648,010 |
| 1962. |  | 227,707 | 225,000 | 548,884 | 2,950,906 | 24,173.016 |
| 1983. |  | 382.260 | 225,000 | 457.525 |  | 30,003,825 |
| 1964. |  | 285,357 | 350.000 | 504,434 | 3,058,061 | $37,805.163$ $36,978,743$ |
| 19850 |  | 82,188 | 500,000 | 999,776 | 2,329,915 | 36,976,743 |
|  | Ontario | Manitoba | Alberta | British Columbia | Canada |  |
|  |  |  |  |  | Quantity | Value |
|  | tons | tons | tons | tons | tons | * |
| 1956 | 15,734,664 | 262,557 | 66,820 | 3, 174,067 | 33,257,318 | 48,809,918 |
| 1957. | $17,390.438$ <br> 15 <br> 1560 | 454,972 | 80,565 | 4,233. 531 | 40,282,081 | 69, 197.662 |
| 1958. | ${ }_{17} 15.788,786$ | 540.703 | 91,882 | 1,985,818 | $38.156,647$ | ${ }_{65}^{55.582 .929}$ |
| 1959. | 17,938,588 | 526.696 | 528,961 | $2,092,804$ $2,255,911$ | $46,439,535$ $45,359,449$ | 60.958 .884 $60,640.621$ |
| 1960. |  | 673,598 | 167,201 | 2,205,911 |  |  |
| 1961. | 18, 381,843 | $594+921$ 943.765 | 98,753 105,695 | $2,709,691$ $2,580,914$ | $\begin{aligned} & 48,938,804 \\ & 50,553,485 \end{aligned}$ | $\begin{aligned} & 66,567,668 \\ & 68,806,358 \end{aligned}$ |
| 1963. | 20, 402, 614 | 3,693,144 | 138,894 | 2,935,268 | 62,665,329 | 79.883,419 |
| 1964. | 23,845,993 | 1,035,248 | 129.364 | 2,780,738 | 89,794,358 | 88. 8882,688 |
| 1965 p | 23,283,280 | 734, 125 | 146.809 | 4,123,341 | 69,156, 175 | 88,337,479 |

${ }^{2}$ Excludes limestone used to make lime or cement.

Clay Products.-The sales value of clay products shipped in 1965 was considerably higher than in 1964. Common clays suitable for the production of building bricks and tile are found in nearly all the provinces; production is greatest in Ontario and Quebec where modernization and expansion of facilities is progressing. In 1965 a new tunnel kiln with an annual capacity of $84,000,000$ bricks was added to a plant at Cooksville, Ont., and construction planned of a kiln and drier to increase the capacity of the plant at Streetsville, Ont, from $60,000,000$ to $84,000,000$ bricks a year. Two new whiteware plants were placed in operation in Quebec. Stoneware clays are produced largely from the Eastend and Willows areas in Saskatchewan and shipped to Medicine Hat, Alta., where, utilizing the cheap gas fuel, they are manufactured into stoneware, sewer pipe, pottery, tableware, etc. Stoneware clay also occurs in Nova Scotia and, although it has not been developed extensively for ceramic use, some is used for pottery. Two large plants and a few small plants manufacture fireclay refractories from domestic clay in British Columbia, Saskatchewan and Nova Scotia. Deposits of high-grade, plastic, white burning clays occur in northern Ontario and deposits yielding high-grade china clay have been found along the Fraser River in British Columbia but these have not been used on a commercial scale. A new kiln placed in operation at Redcliff, Alta., in 1965 is successfully firing dry-pressed bricks from local red-firing clays and Whitemud formation clays from the Cypress Hills of Alberta and Saskatchewan.

## 24.-Value (Total Sales) of Producers' Shipments of Clay Products, by Province, 1956-65

Nore.-Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1948 edition.

| Year | Newtoundland | Nova Scotis | New <br> Brungwick | Quebec | Ontario |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | * | \$ | \$ | * | \$ |
| 1956. | 47.145 | 1.196.868 | 975,855 | 9.415 .703 | 19,173,336 |
| 1957. | 29.500 | 1,345,861 | 803, 169 | 8,898,855 | 18,353,299 |
| 1958. | 58,282 | 1,509,536 | 629,921 | 10,675,463 | 22,786,291 |
| 1959. | 68.000 | 1,638.789 | 743,966 | 10+374, 162 | 22,174,895 |
| 1960. | 83,435 | 1,673,618 | 705, 366 | 8,093,038 | 20,191,325 |
| 1961 | 75,890 | 1,582,153 | 744,293 | 8, 195,790 | 19,036,556 |
| 1902. | 142,000 | 1,712,503 | 822,400 | 7,450,131 | 20.146,786 |
| 1963. | 92,120 | 1,337,430 | 623,168 | 6,852,660 | 21,819, 887 |
| 1964 | 99.038 | 1,541,117 | 697,974 | 6.839.772 | 23,723,512 |
| 1965]. | 71,900 | 1.551,637 | 600,000 | 6,562,548 | 25,337,874 |
|  | Manitobs | Saskat. chewan | Alberta | British Columbia | Canada |
|  | \$ | \$ | \$ | \$ | \$ |
| 1956 | 754,503 | 1,054,071 |  |  | 37.784,980 |
| 1957. | 827.697 | 1,015,389 | 2,628,187 | 2,020,701 | 35,922,158 |
| 1988. | 682,943 | 1,158,803 | 2,569,170 | 1,639,494 | 41.709,903 |
| 1959. | 618,550 | 1,374,834 | 3.572,920 | 1.949,332 | 42.515,448 |
| 1960. | 813,135 | 1,130,332 | 3,551,682 | 1,984,607 | 38,226,538 |
| 1961. |  | 1,115,474 | 3.517,473 | 2.091,353 | 36,982,948 |
| 1962. | 621,275 | 1,354,635 | 3.445,687 | 2.121,461 | 37.816.878 |
| 1983. | 594,072 | 1,044,721 | 3,452,885 | 2,337,603 | 38, 154, 294 |
| $196+$ | 519,726 | 1,336,383 | 3,787,609 | 2.285,454 | 40, 830.585 |
| 1965 D. | 531,000 | 1,330,143 | 3.822,477 | 3,398,250 | 43,205.829 |

## Subsection 3.-Petroleum and Natural Gas

In 1965 , production of crude oil averaged $812,000 \mathrm{bbl}$. daily and output of liquid hydrocarbons extracted from "wet" natural gas amounted to 124,000 bbl. daily, comparable figures for 1964 being $750,000 \mathrm{bbl}$. and $105,000 \mathrm{bbl}$, respectively. Thus, in total, the output of all liquid hydrocarbons averaged $936,000 \mathrm{bbl}$. daily, an increase of 11 p c. over 1964. Net production of natural gas averaged $3,623,000$ Mef. a day, an $8.7-$ p.c. increase over the previous year.

Alberta continued as the dominant producer of petroleum, accounting for 63 p.c. of all crude oil produced in Canada in 1965; Saskatchewan accounted for 30 p.c., British Columbia for 5 p.c. and the remainder came principally from Manitoba along with small volumes from Ontario and the Northwest Territories. Alberta also produced 93 p.c. of the country's total output of propane, butane and pentanes plus. Of the total of 124,000 bbl., $77,000 \mathrm{bbl}$. were pentanes plus, $28,000 \mathrm{bbl}$. were propane and $19,000 \mathrm{bbl}$. were butane.

The oil and gas industry drilled 3,780 wells ( $16,502,000$ feet) in 1965 , consisting of 1,574 exploratory wells ( $6,967,000$ feet) and 2,206 field development wells ( $9,535,000$ feet ). The footage was slightly more than in 1964 when $16,082,000$ feet were drilled but the number of wells completed was considerably more than the 3,569 drilled in 1964. The reduction in footage per well in 1965 was attributable almost entirely to development drilling in shallower fields.

Additions to published reserves of oil and natural gas in 1965 were much smaller than in the previous year. However, the 1964 increases were mainly the result of revisions to established fields following the introduction of pressure maintenance schemes. Newly discovered resources in 1965 were roughly twice those of 1964 but reserve estimates include only a minor portion of the new reserves discovered in northwestern Alberta. At the end of the year there were $6,711,000,000 \mathrm{bbl}$. of recoverable crude oil reserves ( $5,720,000,000 \mathrm{bbl}$. being in Alberta) and an additional $999,000,000 \mathrm{bbl}$. of natural gas liquids ( $952,000,000 \mathrm{bbl}$. being in Alberta). Reserves of natural gas amounted to $44,400,000,000$ Mcf. with $36,400,000,000$ Mcf. located in Alberta, $6,800,000,000 \mathrm{Mcf}$. in British Columbia and lesser quantities in other provinces. Developments under way in 1966 are expected to increase considerably the estimate of oil reserves for Alberta.

## 25.-Quantity and Value of Producers' Shipments of Crude Petroleum, by Province, 1556-65

Note.-Figures from 1936 are given in the corresponding table of previons Year Books beginning with the 1948-49 edition.

| Year | New Brunswick |  | Ontario |  | Manitobs |  | Saskatchewan |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity | Value | Quantity | Value | Qugntity | Value | Quantity | Value |
|  | bbl. | \$ | bbl. | \$ | bbl. | \$ | bbl. | \% |
| 1956.. | 16.628 19.401 | 23.279 27.161 | 593,370 623,666 | 1.958.121 | $5,786,540$ 6089,743 | 13,633,088 | $21,077,371$ $36,881,089$ | 36,243.078 |
| 1958. | 15.189 | 21,265 | 778.341 | 2,623,000 | 5.829+226 | 14,415,676 | 44, 626, 148 | 96, 704,863 |
| 1959. | 14,479 | 20.271 | 1,001.580 | 3, 194,000 | 5,056,075 | 11,819,872 | 47,442,498 | 97,731,546 |
| 1960. | 14,148 | 19,807 | 1,005,030 | 3,150,065 | 4,764,045 | 10,690,384 | 51,908, 428 | 103,957,009 |
| 1961 | 12.024 | 16.833 | 1,149,087 | 3,546.740 | 4,480,348 | 10, 156,000 | 55,860.104 | 115, 719,791 |
| 1962. | 10.333 | 14,466 | 1, 124,534 | 3,661, 174 | 3,926,683 | 9,435,819 | 64,432,411 | 141.783.580 |
| 1963. | 7.381 | 10.333 | 1,205,376 | 3,459,429 | 3.771,163 | 9.188.835 | 71, 303.893 | 100, 226,978 |
| 1964. | 4,688 | 6.516 | 1,246,682 | 4,014,316 | 4,417,224 | 10,296+549 | 81,404.430 | 186.171.031 |
| 1965p.... | 3,000 | 4,170 | I,297,000 | 4,176,340 | 5,003,000 | 11,661,993 | 87,619,000 | 200,384,653 |
|  | Alberta |  | British Columbia |  | Northwest Territories |  | Canada |  |
|  | Quantity | Value | Quantity | Value | Quantity | Value | Quantity | Value |
|  | bbl. | \$ | bbl. | \$ | bbl. | \$ | bbl. | * |
| 1956. | 143.909.641 | 353,629,158 | 148.454 | 302,375 | 449.409 | 762.773 | 171.981, 413 | $40,581,872$ |
| 1957. | 137, 492.316 | 355.555, 140 | 340.945 | 783,717 | 420,844 | 294.591 | 181.848, 004 | $453.583,620$ 398.747818 |
| 1958. | 113.277 .847 | 283,262, 592 | ${ }^{512.359}$ | 1.022.156 | 457,086 |  |  | 422.082,535 |
| 1959. | 129,967,312 | $306,917,803$ $302,841,423$ | 866.234 867,057 | $1,583,129$ $1,626,590$ | 430,319 468,545 | 1,025,914 | 189, 534,221 | 422,926,497 |
| 1960.. | 130,506,968 | 302,841, 423 | 867,057 | 1,626,590 | 468,545 | 641,29 |  |  |
| 1961. | 157, 811. 712 | 355,530.845 | 1,017, 826 | 1,859.873 | 516.979 | 730,160 | 220, 848,080 |  |
| 1962. | 165, 124,967 | 379,830.303 | 8, 914.220 | 18,872.122 | 572.004 | 755,045 | ${ }_{257}^{244.115 .152}$ | 6515. 2848.997 |
| 1963. | 168,214,054 | 416.844,350 | 12,528, 681 | 24.841,518 | 631,229 | 633,754 | 257, 661.777 | $615,204.987$ 674.376 .728 |
| 1964.... | 175.441, 589 | 450, 186,921 | 11.525, 476 | 27,261,946 | 586,296 632,000 | 438,549 472.786 | $274,626.385$ $293,571,941$ | ${ }_{718,248,241}$ |
| $1965{ }^{\text {P }}$. | 185,506,941 | 474,341,248 | 13.511,000 | 27,207,101 | 632,000 |  |  |  |

## 26.-Natural Gas Produced, by Province, and Total Value, 1956-65

Nors.-Figures from 1920 are given in the corresponding table of previous Year Books beginning with the $19: 10$ edition.

| Year | New Brunswick | Ontario | Ssskstchewan | Alberta | British Columbia | Northweat Territories | Canada |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  | Quantity | Value |
|  | Me. | Mcf. | Mer. | Mei. | Mer. | Mcf. | Mef. | \$ |
| 1956. | 190,322 | 12,811,618 | 9, 807.697 | 146, 133, 893 | 187,848 | 21,210 | 169,152,586 | 16.849, 558 |
| 1957. | 178,417 | 14,400.913 | 13,994,347 | 183, 140, 220 | 8,274,942 | 19,243 | 220,006, 688 | 20.962,501 |
| 1958.... | 123,957 | 16,147,986 | 18,819,795 | 239,049,591 | 63,638,297 | 24.100 | 337.803.726 | 32,057,536 |
| 1959.... | 117,502 | 16,839,236 | 33,612,966 | 297,568,926 | 69, 128,708 | 67. 189 | 417,331, 527 | 39,609,393 |
| 1960.... | 98,701 | 16,987,056 | 36,571,633 | 383,882,986 | 85,692,188 | 39,785 | 522,972,327 | 52,196,882 |
| 1961. | 96,318 | 14,544,165 | 37, 192, 595 | 500, 843, 900 | 103,018.988 | 41,678 | 655,737.644 | 68,421,918 |
| 1962.... | 95,750 | 15,648, 294 | 38,845, 732 | 770,963, 122 | 121.093, 122 | 56,707 | 846.702,727 | 108,641, 159 |
| 1983.... | 103,524 | 15.920,055 | 39,936,193 | 943,354,973 | 118,058,994 | 51,478 | 1,117,425,217 | 150.468,714 |
| 1084.... | 105.055 | 13.815,967 | 62,281,321 | 1,184,754,869 | 146,105.999 | 34,297 | 1,407,097.508 | 172,966.859 |
| 1965P.,. | 100,380 | 13.369,000 | 41,565,000 | 1,253,029,000 | 161,976,000 | 44,075 | 1,470,083,455 | 197.296,911 |

Alberta.-The highlight of 1965 in Alberta was the discovery in February of oil and gas near Rainbow Lake in northwestern Alberta by Banff Oil Ltd., Acquitaine Company of Canada Ltd., and Socony Mobil Oil of Canada Led. The productive zones are comparatively thick and porous and have excellent producing characteristics. The main reservoir is the Middle Devonian, Keg River reef having thicknesses up to 600 feet. The discovery initiated a rush to acquire land and commence work but the isolated location, some 400 miles north of Edmonton, and muskeg conditions hampered initial operations. Nevertheless, the Rainbow Lake discovery materially helped to make 1965 a record year for exploratory drilling in Western Canada. The Keg River formation and the overlying muskeg formation extend from northwestern Alberta and adjacent areas in British Columbia and the Northwest Territories southeastward into Saskatchewan and Manitoba, thus indicating large areas for future exploration.

Of the $10,200,000$ feet drilled in Alberta in 1965, 4,500,000 feet was exploratory drilling. This was 566,000 feet more than in 1964 but development drilling declined by 700,000 feet. The number of exploratory weils totalled 873 in 1965 against 718 in 1964 and the number of development wells was 1,083 compared with 1,122 in 1964.

Recent driling in or near the Alberta Foothills has been noteworthy for the discoveries of wet natural gas. A large Devonian gas reservoir at Gold Creek, 25 miles southeast of Grande Prairie is an important example. There the gas tested 150 bbl . per Mcf. and the field has "pay" sections greater than 200 feet. In the Obed region, 35 miles west of Edson, additional Devonian gas was discovered which has a sulphur content of 25 p.c., making the gas as valuable for sulphur as for pipeline gas.

Construction progressed favourably at the plant of Great Canadian Oil Sands Limited, 20 miles north of Fort MeMurray. The schedule calls for the commencement of commercial production of oil from the Athabasca bituminous sands in the latter part of 1967. This project, to cost an estimated $\$ 230,000,000$ including a pipeline from Edmonton to the site, will produce some $45,000 \mathrm{bbl}$. daily of crude, tailored to meet refinery requirements.

Saskatchewan.-Despite a lack of major discoveries of either oil or gas, the number of wells drilled in the province continued to increase. Indeed, the 1,284 wells drilled in 1965 was a record but footage drilled, a total of $4,500,000$ feet, was considerably less than the $5,300,000$-foot record established in 1957 . The lack of large discoveries was reflected in a decline in exploratory work; the number of exploratory wells decreased from 478 in 1964 to 438 in 1965 and footage drilled showed a corresponding trend from $1,660,000$ feet to $1,620,000$ feet. There were, however, several small oil discoveries; of the total 1,284 wells drilled, 697 were oil wells, 57 were gas wells, 11 were service wells and 519 were dry and abandoned.

British Columbia.-In 1965, oil discoveries about 60 miles north of Fort St. John reversed the previously declining trend of exploration in British Columbia and drilling for natural gas in the Fort Wilson area added to the upsurge in activity created by these oil discoveries. Drilling increased to $1,080,000$ feet involving 249 wells from 663,000 feet and 140 wells in 1964; exploration wells increased from 53 to 103 and development well completions from 87 to 146 . The most significant oil discovery was in the Weasel River area which extended by several miles the oil trend indicated by the 1964 Nancy diseovery and a new gas discovery 70 miles southwest of Fort St. John indicated an entirely new area for production. Of the 249 wells drilled in the province, 113 were oil wells, 41 were gas wells, two were service wells and 93 were abandoned.

Manitoba.-The revival in activity that occurred in 1963 and continued in 1964 came to an end in 1965. Drilling declined from 107 wells in 1964 to 64 in 1965 and footage from 247,000 feet to 165,000 feet. However, the fact that Manitoba has the same formations as those in which the Rainbow Lake discoveries were made in Alberta may encourage a return of activity. In 1965, 26 oil wells were completed and the remaining 38 wells were dry.

Yukon and Northwest Territories.-Drilling continued in 1965 at about the same rate as in the previous year but no important discoveries were made. Eighteen wells were drilled, one of which encountered oil; two found gas but were not of commercial consequence.

Eastern Canada.-In Ontario a sharp decrease in both exploratory and development work resulted in fewer wells and less footage drilled. No discoveries of importance were made. The 204 wells completed included 23 oil wells, 68 gas wells, 16 service wells and 97 dry holes. Exploration continued in Hudson Bay and the lowlands on its southern shore. In Quebec, two exploratory dry holes of about 6,000 feet each were drilled although minor gas was reported. One dry hole, 2,94l feet in depth, was drilled in New Brunswick.

Intensive exploration was carried out in the East Coast offshore area and land holdings were nearly doubled to $114,000,000$ acres. There were 24 core-hole tests completed offshore and five core-holes on Sable Island. On the west coast of Newfoundland two dry boles aggregating 4,900 feet were drilled on the Port au Port peninsula.

Petroleum Refining and Marketing.-Over $30,000 \mathrm{bbl}$ of daily crude oil refining capacity was added to established refineries in 1965 bringing the total to $1,083,150 \mathrm{bbl}$. Canada now has the eighth largest industry in the world in terms of crude treating capacity. Moreover, it is unquestionably one of the most advanced in terms of down-stream refinery units such as catalytic cracking and catalytic reforming.
27.-Crude Oil Refining Capacity, by Region, as at Jan. 1, 1946, 1956 and 1966


In 1965, Canadian refineries received a daily average of $967,000 \mathrm{bbl}$. of crude oil with domestic oil accounting for 59 p.c. of total receipts. Imported crude, on an average daily basis, amounted to 395,000 bbl. with 236,000 coming from Venezuela, 63,000 from Saudi Arabia, 60,000 from Iran and Iraq combined, 22,000 from Kuwait, 11,000 from Trinidad and 3,000 from Qatar. Imports of refined products increased considerably over 1964 to an average of $165,000 \mathrm{bbl}$. daily, a gain of $45,000 \mathrm{bbl}$. daily. Light and heavy fuel oil and diesel oil comprised the major categories of imports.

Domestic demand in 1965 was made up of $1,063,000 \mathrm{bbl}$ ．daily of sales to consumers and $80,000 \mathrm{bbl}$ ．daily used in the petroleum industry，a total of $1,143,000 \mathrm{bbl}$ ．daily compared with the 1964 level of $1,069,000 \mathrm{bbl}$ ．Exports of crude，all to the United States，averaged $295,000 \mathrm{bbl}$ ．daily and product exports，consisting largely of natural gas liquids such as propane and butane，amounted to $28,000 \mathrm{bbl}$ ．daily．

## 23．－Domestic and Foreign Crude Oll Received at Canadian Refineries，by Region， 1555， 1560 and 1965

| Region | 1055 |  | 1960 |  | 1965 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Domestic | Foreign | Domestic ； | Foreign | Domestic | Foreign |
|  | bbl．／day | bbl．／day | bbl．／dsy | bbl．／day | bbl．／dsy | bbl．／dsy |
| Atlantic Provinces and Quebec．．．．．． | 106．446 | 210.423 | 197．555 | 337，494 | 299．607 | 392．734 |
| Prairie Provinces and Northwest |  |  | 197，555 | 10，004 |  | 1.889 |
| Territories．．．．．．．．．．．．．．．．．．．．．．．． | 133,961 47,431 | 二 | 145,499 65,917 | 二 | 191.143 81,399 | 二 |
| Canada．．．．．．．．．．．．．．．．．．．．．． | 287，838 | 287，698 | 408，971 | 317，498 | 572，161 | 394，593 |

Natural Gas Processing and Marketing．－Natural gas consumers and gas pipeline companies require gas that contains relatively little non－flammable content and is free of noxious components．Since a large proportion of gas produced in Canada does not meet market specifications，there is a major gas processing industry located mainly in Alberta which extracts ingredients that，in themselves，are valuable．These by－products include the natural gas liquids such as propane，butane and pentanes plus and elemental sulphur． At the end of 1965 there were 103 gas plants operating in Canada－91 in Alberta，four in British Columbia，six in Saskatchewan and two in Ontario．The addition in 1965 of 700,000 Mcf．daily of raw gas treating capacity raised the total to $6,100,000 \mathrm{Mcf}$ ．daily． Although nine plants were added，only two were of large size－the Westcoast Transmission Company Limited＇s plant for the Clarke Lake field near Fort Nelson in British Columbia having a raw gas capacity of $200,000 \mathrm{Mcf}$ ．daily，and the Edson plant of Hudson＇s Bay Oil and Gas Company Limited having a capacity of $300,000 \mathrm{Mcf}$ ．daily．

Of the $1,320,000,000 \mathrm{Mef}$ ．of Canadian gas plus imports of $16,000,000 \mathrm{Mcf}$ ．available for consumption in $1965,404,000,000$ Mcf．went to the United States， $568,000,000$ Mcf． was sold to residential，commercial and industrial consumers in Canada，and the remainder was used by the industry in pipeline，field or plant use．In total， $722,000,000 \mathrm{Mcf}$ ．of gas was consumed in Canada compared with $633,000,000 \mathrm{Mcf}$ ．in 1964 ．Net additions to storage in 1965 amounted to $210,000,000$ Mcf．compared with $190,000,000$ Mcf．in 1964.

Table 29 shows sales of natural gas in Canada as well as the number of customers． During 1965，natural gas supplied roughly 17 p．c．of Canada＇s energy requirements．

29．－Sales of Natural Gas in Canada，by Province 1965，with Totals for 1961－65

| Province | Sales |  | Value per Mcl． | Customers Dec． 31 |
| :---: | :---: | :---: | :---: | :---: |
|  | Quantity | Value |  |  |
|  | Mcf． | \＄ | ＊ | No． |
| Newt Brunswick | 60，000 | 189.000 | 3.15 | 2.187 |
| Quebee．， | 31，244，000 | 31，240．000 | 0.99 | 218,737 |
| Ontario． | 219，198．000 | 189，096．000 | 0.86 | 890.836 |
| Sapkstchewan． | $33,164.000$ 56.169 .000 | 22，644．000 | 0.68 | 95，084 |
| Alberts．．．．．．． | 169，996，000 | $25,547,000$ | 0.45 0.32 | 114.997 260.573 |
| Britieh Columbia | 58，113，000 | 43，832，000 | 0.75 | 187，124 |
| Canda， 1565. | 557，944，040 | 366，543，640 | 0.65 | 1，569，538 |
| 194. | 504，503， 888 | 327，982， 720 | 0.65 | 1，459， 519 |
| 1905. | 451，598， 388 | 287，584，177 | 0.64 | 1，397，138 |
| 19621. | 412，061， 569 $370,739,542$ | 257，589，445 $226,678,494$ | 0.62 | 1，308，085 |

## Subsection 4.-Coal*

Production from Canadian coal mines in 1965 was 2.4 p.c. higher than in 1964; increased production of subbituminous and lignite coals more than compensated for a lower output of bituminous coal. Compared with 1956, production in 1965 declined about $3,300,000$ tons, consumption about $9,500,000$ tons and imports about $5,600,000$ tons. Exports, on the other hand, showed a fairly steady increase over the decade, from 600,000 tons in 1956 to $1,200,000$ tons in 1965. This increase, however, was attributable only to higher exports of western bituminous coking coal, mainly to Japan. The weak competitive position of Canadian coals is caused by several factors but mainly by high production costs due to low productivity in comparison with coal mines in the United States, and by high costs of moving coal long distances, particularly bituminous coal from mines in Nova Scotia and New Brunswick to the industrial centres of Ontario and Quebec. Mechanization of production, underground and surface coal preparation, particularly of slack and fine sizes, and efforts to control quality through coal sampling and analysis have all been increased to enable the industry to supply higher quality products at reduced costs. On the basis of costs per ton in Western Canada, significant improvement was noted but in Eastern Canada costs continued to increase in 1965.

Assistance to the coal industry was continued by the federal and provincial governments through research programs. The problem of fine coal production received particular attention, with research directed toward improved methods of mining, beneficiation and combustion. Technical assistance was also rendered in the field of quality control through sampling and analysis and through studies of the coking properties of coals in relation to their preparation for export markets and their use in prospective steel industries. Financially, the Federal Government continued assistance to the coal industry through payments administered by the Dominion Coal Board with aid in the acquisition of new equipment and subventions on coal transportation (see pp. 583-585).

Production and Consumption.-Coal produced in Canada in 1965 amounted to $11,589,000$ tons with an average value of $\$ 6.55$ a ton. The number of man-days employed by the industry was $2,261,185$, compared with $2,230,376$ in 1964 . In Nova Scotia, which is the major producing province and the one whose economy is most affected by changing coal markets, there was an increase in coal-mine employment of 2.6 p.c. to $1,565,693$ mandays; increases were also shown in Alberta, Saskatchewan and the Yukon, amounting to 1.3 p.c., 6.4 p.e., and 2.5 p.e., respectively. In New Brunswick employment decreased 1.1 p.c. and in British Columbia 9.9 p.c.

Of the coal produced, 60.1 p.c. was bituminous with an average value of $\$ 9.44$ a ton at the mine, 22.0 p.c. was subbituminous with a value of $\$ 2.52$ a ton, and 17.8 p.c. was lignite with a value of $\$ 1.80 \mathrm{a}$ ton. The proportion of the output won by stripping methods was 47.9 p.c. The output per man-day of coal from strip mines was 30.40 tons and that from underground mines 3.45 tons representing a decrease from 1964 of 1.67 tons for the former and 0.28 tons for the latter. The over-all output per man-day was 16.36 tons compared with 15.89 tons in 1964.

Coal consumption in Canada was about $26,775,000$ tons in 1965 , somewhat higher than the $25,100,000$ tons consumed in 1964 . About 62 p.c. was imported, of which over 96 p.c. was bituminous coal used mainly in Ontario and Quebec; imports were 10.7 p.c. higher than in 1964. The production of coke used about $5,900,000$ tons of coal, over 90 p.c. of which was imported. Sales of coal to the commercial and household heating markets amounted to about $2,100,000$ tons, and the amount used by industrial consumers, including thermal-electric power plants, was about $15,500,000$ tons, an increase of 15.5 p.c. over 1964. There were $1,200,000$ tons of Canadian coal exported in 1965, most of it from mines in Western Canada going to Japan and the United States for blending in the manufacture of metallurgical coke. About 4,800 tons went to the Island of St. Pierre

[^186]from Nova Scotia and about 30,000 tons from New Brunswick to the eastern United States. The manufacture of briquettes amounted to 68,416 tons in 1965 , compared with 59,913 tons in 1964.

## 30.-Coal Production, by Province, and Trotal Value, 1936-65

Nors.-Figures from 1874 are given in the corresponding table of previous Year Books beginming with the 1911 edition.

| Year | Nova Scotia | New Brunswick | Saskatchewab | Alberts | $\underset{\text { Columbia }}{\text { Britiah }}$ | $\underset{\text { Territory }}{\text { Yukon }}$ | Canada |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  | Quantity | Value |
|  | tons | tons | tons | tons | tons | tons | tons | \$ |
| 1956. | 5,775,025 | 988,266 | 2,341,641 | 4,328,787 | 1,472.519 | 9,372 | 14,915,610 | 95.349,763 |
| 1957... | 5,685,770 | 976,597 | 2,248,812 | 3,158,546 | 1.113,699 | 7,731 | 13, 189,155 | 90,220,870 |
| 1958. | 5,269,879 | 790,719 | 2,253,176 | 2,519,901 | 849,091 | 4,344 | 11,687,110 | 79,963.327 |
| 1959. | 4,391,829 | 1,003,387 | 1,947,380 | 2,528,755 | 751, 492 | 3,879 | 10.626,722 | 73,875,895 |
| 1960... | 4,570,240 | 1,028,064 | 2,170,797 | 2,391,699 | 843,868 | 6,470 | 11,011,138 | 74,676,240 |
| 1981....... | 4,300,758 | 887,903 | 2,208,851 | 2,027,820 | 964,663 | 7,703 | 10,397,704 | 70,052.683 |
| 1962....... | 4,204,779 | 815,529 | 2,256,306 | 2,087,310 | 913,196 | 7,649 | 10.284,769 | 69, 160, 213 |
| 1963....... | 4,554,944 | 888.336 | 1,873,556 | 2,289,943 | 962,684 | 8.231 | 10.575,694 | 71,756,581 |
| 1964....... | 4,298,130 | 1,003,362 | 1,984, 039 | 2,971,183 | 1,050,430 | 7,229 | 11,319,323 | 72,735,085 |
| 1865....... | 4,134, 161 | 996,328 | 2,063,933 | 3,413,828 | 971,465 | 8,801 | 11,588,616 | 75,901,126 |

The amounts and percentages of domestic and imported coal apparently consumed in Canada in the years 1956-65 are shown in Table 31 and imports by type as well as total exports in Table 32. The imports represent amounts taken out of bond for consumption during the respective years, regardless of when received. Thus, the totals are exclusive of coal lauded at Canadian ports and re-exported or ex-warehoused for ships' stores without being taken out of bond.

## 31.-Consumption of Canadian and Imported Coal in Canada, 1856-65

Nore.-Figures from 1880 are given in the corresponding table of previous Year Books beginning with the 1921 edition.

| Year | Canadian Coal ${ }^{1}$ |  | Imported Coal 'Entered for Consumption'2 |  |  |  | Grand <br> Total | Con-sumption per Capita |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | From United States | From Britain | Tota |  |  |  |
|  | tons | p.c. | tons | tons | tons | p.c. | tons | tons |
| 1956. | 14,115,095 | 38.9 | 22,045,485 | 153,404 | 22,198,049 | 61.1 | 36,313,144 | 2.26 |
| 1957. | 12,478,626 | 39.6 | 18.910,544 | 134,671 | 19,041,030 | 60.4 | 31.519,656 | 1.90 |
| 1958. | 11,054,757 | 43.9 | 14,089,557 | 65,275 | 14, 154, 121 | 58.1 | 25,208,878 | 1. 48 |
| 1960 | $10,589,263$ $9,973,308$ | 43.1 42.9 | $13,861,676$ $13,211,493$ | 96,814 65,375 | $13,958,996$ $13,276,599$ | 50.9 57.1 | $24,548,259$ $23,249,907$ | 1.41 1.31 |
| 1961. | 9,572,805 | 44,3 | 12,253,272 | 53,226 | 12,057,086 | 55.7 | 21,629,891 | 1.19 |
| 1988. | 9,510,293 | 43.4 | 12,583,618 | 30,571 | 12,377,965 | 56.6 | 21, 888,258 | 1.18 |
| 1983. | 9,504,903 | 42.0 | 13,348,913 | 21, 101 | 13, 105,688 | 58.0 | 22.610,589 | 1.20 |
| 1984. | 10.080,243 | 40.0 | 14,983, 536 | 5,578 | 14,987,656 | 59.8 | 25,067,899 | 1.29 |
| 1965. | 10,181,171 | 38.0 | 16,590,348 | 5,045 | 16,593,547 | 62.0 | 26,771,718 | 1.35 |

[^187]
## 32--Imports of Anthracite, Bituminous and Lignite Coal and Briquettes, and Eiports of Domestic Coal, 1956-65

Nort.-Figures from 1868 are given in the corresponding table of previous Year Books beginning with the 1911 edition.

| Year | Imports of Coal and Briquettes |  |  |  |  |  | Exports of Domestic Conl |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Anthracite | Bituminous' | Lignite | Ariquettes ${ }^{2}$ | Totals |  |  |  |
|  | tons | tons | tons | tons | tons | \$ | tons | * |
| 1956. | 2,545,6273 | 20,065,807 | 1,940 | 126,724 | 22,740,098 | 130,318,369 | 594, 166 | 4.710,030 |
| 1957 | 1,925,4983 | 17,548,585 | 2,186 | 73,306 | 19,549,555 | 118,581,708 | 896.311 | 3,357,959 |
| 1968 | 1,556,018 ${ }^{\text {a }}$ | 12,934,262 | 1,035 | 41,820 | 14,533,135 | 88,552,326 | 338,544 | 2,907,513 |
| 1959. | 1,603,909 | 12,621,429 | $10,780{ }^{4}$ | 24,521 | 14,260,639 | 84, 808,838 | 473.768 | 3,588, 313 |
| 1960 | 1,297,467 | 12,250,832 | 16,537 ${ }^{\text {/ }}$ | 15,528 | 13,580,384 | 77.174,112 | 852,921 | 6,789, 163 |
| 1961. | 1,058,157 | 11,237,629 | 10,712 ${ }^{4}$ | 9.664 | 12,316,162 | 71,717,030 | 939,380 | 8,541,679 |
| 1962. | 914.336 | 11, 687,898 | 11,9554 | 7.608 | 12,621.797 | 74,307,252 | 901, 660 | 8,590, 693 |
| 1963. | 847,326 | 12,513,423 | 9,6574 | 6,445 | 13,376,851 | 78,837,274 | 1,058,788 | 9.916,398 |
| 1964. | 653, 8383 | 14, 333,991 | 1,285 | 7.140 | 14,996. 254 | 88,472,326 | 1,283,612 | 11,936,285 |
| 1965. | 640.161 * | 15,954,002 | 1,230 | 7,934 | 16,603, 327 | 126,200,054 | 1,232,414 | 12,782,848 |

I Includes coal ex-warehoused for ships' stores.
${ }^{2}$ Conl or coke.
${ }^{2}$ Includes anthracite dust.
${ }^{4}$ Includes coal dust, ground coal and coal n.o.p.
Provincial Activities in the Industry.-Coal is produced in five provinces and a large share of the market for the industry is concentrated in Central Canada where there is no coal production. A small amount of coal is also mined in the Yukon Territory.

Nova Scotia's 1965 coal production of $4,134,161$ tons, which accounted for 35.7 p.c. of the total Canadian output, was 3.7 p.c. lower than in 1964 . The output is mainly high volatile bituminous coking coal mined in the Sydney, Cumberland and Pictou areas, although some non-coking bituminous coal is mined in the St. Rose, Inverness and Port Hood areas of Cape Breton Island. The average value at the mines was $\$ 11.00$ a ton and the output per man-day was about 2.64 tons. All production comes from underground mines, which are mostly mechanized. About 56 p.c. of the production was shipped to other provinces, mainly Central Canada, to be used for industrial purposes; the remainder was used locally for steam-raising, power generation, household and commercial heating and the manufacture of metallurgical coke.

New Brunswick's production, of which more than 85 p.c. is strip-mined, is entirely high volatile bituminous coal mainly from the Minto area with a small amount from strip mines in the Chipman and Coal Creek areas. The 1965 production of 996,328 tons was 8.6 p.c. of Canada's output. Average output per man-day from strip mines was 5.625 tons and from underground mines 1.88 tons. The coal had an average value at the mines of $\$ 8.67$ a ton. A large part of the production is used locally for heating, power generation and processing; in 1965 about 5.3 p.c. was shipped to Central Canada and about 3.1 p.c. to the United States.

Saskatchewan's coal production is entirely lignite, mined by stripping in the Bienfait and Estevan areas in the Souris Valley; this is the only active lignite coal-field in Canada. Production in 1965 was 3.5 p.c. higher than in the previous year, amounting to $2,063,933$ tons and representing 17.8 p.c. of the Canadian production. The average output per man-day was 43.784 tons and the average value at the mine was $\$ 1.80 \mathrm{a}$ ton. This is the cheapest source of coal in Canada. The Estevan area serves the provincially owned Boundary Dam thermal-power generating station which uses a large portion of the total lignite production. Almost 39 p.c. of the output was shipped to Manitoba and Ontario for industrial, commercial and household use; the remainder was used within the province for similar purposes. About 31,560 tons of briquettes were produced from lignite, an increase of 45.6 p.c. over the 1964 output.

Alberta's production of coal increased 14.9 p.c. in 1965 to $3,413,928$ tons and was 29.5 p.c. of Canada's total. Several types are available in the province, ranging from
semi-anthracite mined in the Cascade area to subbituminous. Coking bituminous coals are present in the Inner Foothills Belt but, because of market conditions, they are mined mainly in the Cascade and Crowsnest areas and a large part of the production is exported to Japan for use in metallurgical industries. In several areas of the foothills, lower rank bituminous non-coking coals are available but production in 1965 was confined to the Lethbridge and Coalspur areas and was very small. The other coal areas produce subbituminous coals which made up almost 75 p.c. of the province's output in 1965 and are used mainly for household and commercial heating and thermal power generation; increasing quantities are being used for the latter purpose. The largest producing areas for subbituminous coals are Castor, Drumheller, Pembina, Sheerness and Taber; in 1965 mines in these areas produced more than 88 p.c. of the Canadian subbituminous coal output of $2,554,752$ tons, an amount more than 21 p.c. higher than in the previous year. The output of bituminous coal decreased slightly to 859,176 tons. Of the total output in Alberta, 71 p.c. was won by stripping, the average output per man-day being 27.482 tons compared with 4.870 tons for underground mines. The average value of bituminous coal was $\$ 6.72$ a ton at the mine, and that of subbituminous coal $\$ 2.52$ a ton. Of the provincial production, 0.9 p.c. was shipped to Ontario, 3.8 p.c. (mainly subbituminous) to Manitoba, 11.4 p.c. to Saskatchewan and 8.1 p.c. to British Columbia. The output of briquettes, which are made from the semi-anthracite and low volatile bituminous coals of the Cascade area, was about 37,000 tons.

More than 93 p.c. of British Columbia's coal output in 1965 came from the Crowsnest area (East Kootenay district) and most of the remainder came from Vancouver Island, with a small output from mines in the northern mainland. The coals range from high volatile to low volatile bituminous coking coals and over 79 p.c. came from underground mines. Production decreased to about 971,465 tons, representing 8.5 p.c. of the country's output. The average value was $\$ 5.97$ a ton at the mine and the average output per man-day was 33.487 tons for strip mines and 6.284 tons for underground mines. Of the total production, 12.5 p.c. was shipped to Manitoba, 3 p.c. to Ontario and small quantities to Alberta and Saskatchewan. More than 400,000 tons of bituminous coking coal from the Crowsnest area were exported, some to the United States but most of it to Japan.

In the Yukon Territory, about 8,800 tons of coal were mined from a single underground mine with an average output per man-day of 3.696 tons. This coal was valued at $\$ 9.73$ a ton and was all used locally.

## Section 2.-Government Aid to the Mineral Industry

## Subsection 1.-Federal Government Aid

Federal assistance to the mining industry takes the form of the provision of detailed geological, topographical, geodetic, geographical and marine data which are of basic importance to the discovery and development of the mineral resources of Canada; the provision, through laboratory and pilot-plant research, of technical information concerning the processing of ores, industrial minerals and fuels on a commercial scale; financial and technical assistance to the gold mining industry under the Emergency Gold Mining Assistance Act, and certain tax incentives (see Chapter XXIII, Section 2 on Taxation in Canada).

The Department of Energy, Mines and Resources.-The federal Department of Energy, Mines and Resources came into being on Oct. 1, 1966. It embraces all of the functions of the former Department of Mines and Technical Surveys, some of the functions of the former Department of Northern Affairs and National Resources, and certain new functions not previously exercised by the Federal Government. The new Department is made up of four Groups-Research, Mineral Development, Water Management, and Energy Development-each headed by an assistant deputy minister and each aiding the Canadian mineral industry in some way.

The Research Group.-This Group contains most of the units of the old Department of Mines and Technical Surveys-the Mines Branch, the Geological Survey of Canada, the Surveys and Mapping Branch, the Observatories Branch and the Geographical Branch.

The Mines Branch is a large laboratory and pilot-plant complex carrying out applied and basic research to discover new and better methods of ensuring mine safety, extracting and refining ores and other minerals, and using metals and minerals in industry and defence. Gratifying results have been achieved in the extraction of metals from ores and in the refining of low-grade crude oil, in the automation of grinding circuits and cyanide-leaching processes in gold mills and in the leaching of ground or crushed uranium ores by bacteria. In pyrometallurgy-the extraction of metals by heat-applied research is concentrated principally on the combination of shaft and electric furnaces for smelting iron ore. In petroleum refining, research concerns hydrogenation, catalytic cracking, and catalyst development. This work is highly significant because of the opening-up of unconventional sources such as the Athabasca tar sands and the co-called Colorado oil shales, whose economic importance had been recognized by the Mines Branch for many years. A close tie-in with producers is maintained in mineral processing in which the emphasis is on the concentration of metallic ores and on the processing and improvement of industrial minerals. In the field of mineral sciences, the physical, chemical, crystallographic and magnetic studies being undertaken on sulphide minerals are of fundamental interest. In physical metallurgy, experiments on new alloy combinations continue to yield valuable practical benefits for Canadian industry.

The Geological Survey of Canada sends about 100 parties into the field each year to collect scientific information and to make observations on the distribution, atructure, metamorphism, palaeontology, physical properties and economic deposits of the nation's rocks and surficial deposits. The Survey does not follow up promising mineral or metal occurrences with detailed exploration; this is left to the multitude of private development and mining companies. Its job is to provide geological maps and basic information by which prospectors, exploration companies and others can chart their course (see also pp. 32-33).

Stratigraphic and structural studies are being carried out in most provinces; recently they have included Operation Selwyn in the Yukon, which so far has examined $20,000 \mathrm{sq}$. miles of the northern Cordillera, and Operation Bow-Athabasca in the southern Rockjes. Both these were helicopter-supported projects. Stratigraphic studies continue in various parts of the Arctic islands, and field investigation of the bituminous rocks of Melville Island has been supplemented by sulphur-isotope studies on hydrocarbons. These rocks contain the first knowa bituminous deposits in the Arctic, where the oil industry has carried out considerable exploratory work in the past few years. As a guide to possible future oil exploration, geophysical studies have been made on the eastern continental margin. An aeromagnetic survey of the Labrador Continental Shelf and a seismic investigation of the Gulf of St. Lawrence will provide information on the thickness of the sedimentary rocks, and some information can be expected on the nature of possible sedimentary basins. Other recent geophysical work included seismic investigations of the western Rocky Mountains and of bedrock configuration beneath overburden in British Columbia and Saskatchewan and in the uranium-producing area of Elliot Lake in Ontario. Aeromagnetic surveys in co-operation with provincial governments have continued, mostly by contract. Field geochemical and biogeochemical techniques, in which mineral deposits are traced through the analysis of minute quantities of minerals in rivers, the soil, and vegetation, continue to be used and developed by the Geological Survey. Two projects using these methods were recently completed in the Bathurst-Jacquet River area of New Brunwsick, and around Cobalt, Ont.

A great deal of fundamental geophysical work of interest to prospectors is being carried out by several divisions of the Observalories Branch. Its airborne geomagnetic surveys, which have ranged all over Canada and across the Atlantic to Scandinavia, have beome famous. There is also a permanent network of geomagnetic observatories, supplemented by temporary stations, of which about 25 are occupied in a field season, to determine secular
geomagnetic change. The Observatories gravity research contributes about 8,000 observations annually to its regional mapping program. Over 20 permanent first-order stations are being operated in seismic research, and a large-scale crustal refraction survey with nine recording parties was recently completed in and around Yellowknife, N.W.T. Research continues into the seismicity of Canada, surface wave dispersion, earthquake mechanisms, and equilibrium heat flow.

No mineral development is possible without accurate, large-scale topographical maps, and progress in this field by the Surveys and Mapping Branch continues to be gratifying. The functions and current operations of this Branch are described briefly in Chapter I, pp. 32-33.

The Geographical Branch studies the natural landscape of Canada and man's impact on it. Mining companies wishing to locate in the Arctic may profit from the Branch's studies of Arctic landforms, the effects of permafrost, and other environmental features.

The Branches of the Research Group also pool their functions in the Polar Continental Shelf Project, a continuing scientific study of the Queen Elizabeth Islands and the surrounding seas, which bas already yielded a great deal of geophysical information.

The Mineral Development Group.-This Group conducts broad economic and mineralcommodity studies and gathers comprehensive domestic and world data on all minerals, includiug energy minerals, for the use of government and private industry. It also liceuses and leases mineral exploration in offshore areas south of the 60th parallel and in Hudson Bay, administers the Emergency Gold Mining Assistance Act (see p. 585) and the Explosives Act, and co-ordinates the Department's foreign-aid work.

Current activities in these fields include regional studies of the Atlantic Provinces' mineral economy, including the Cape Breton coal situation; a digest of the mining laws of Canada; assessment of several mineral projects throughout Canada for which federal support has been requested; participation in international minerals work through such agencies as the United Nations Lead-Zinc Study Group, the Organizations for Economic Co-operation and Development, and the General Agreement on Tariffs and Trade. In collaboration with the External Aid Office, the Group is setting up training courses for mineral scientists, technologists and economists brought to Canada under the various aid programs and is advising on mineral projects undertaken by Canada as an aid to developing countries. Also of considerable value to the mining industry are the Roads to Resources Program and the Development Road Program, described in Chapter XIX, Part III, Section 2.

The Water Management Group. -The role of this Group is to advise on federal water policies and to co-ordinate the work of federal agencies in water-resource management and water pollution. The task is essentially twofold: the most efficient and beneficial use of Canada's streams and lakes, and the preservation, or restoration, of their purity. An illustration of the work concerning mining companies is the monitoring of mine waste effluents in eight base-metal mining areas of New Brunswick. This study will be directed from a regional laboratory at Moncton, with the collaboration of the Department of Fisheries, the Province of New Brunswick, and the mining companies. A similar unit and program are being set up at Calgary, Alta. Personnel is also being recruited to conduct basic and applied research in the abatement of mine pollution in general.

The Energy Development Group,-This Group, still in the process of formation (December 1966), will examine Canada's total energy situation and requirements. New gas and oil discoveries and the great strides being made in the development of nuclear power make it imperative that policy-making reflect Canada's total energy picture.

The Dominion Coal Board.*-The Board was established by the Dominion Coal Board Act (RSC 1952, e. 86) which was proclaimed on Oct. 21, 1947. By this Act the Board was constituted a department of government to advise on all matters relating to

[^188]the production, importation, distribution and use of coal in Canada. The Board is albo charged with the responsibility of administering, in accordance with regulations of the Governor in Council, any coal subventions or subsidies voted by Parliament.

The Board is empowered to undertake research and investigations with respect to:-
(1) the systems and methods of mining coal;
(2) the problems and techniques of marketing and distributing coal;
(3) the physical and chemical characteristics of coal produced in Canada with a view to developing new uses therefor;
(4) the position of coal in relation to other forms of fuel or energy available for use in Canada;
(5) the cost of production and distribution of coal and the accounting methods adopted or used by persons dealing in coal;
(6) the co-ordination of the activities of government departments relating to coal; and
(7) such other matters as the Minister may request or as the Board may deem necessary for carrying out any of the provisions or purposes of the Act.

In addition, the Dominion Coal Board Act provides authority in the event of a national fuel emergency to ensure that adequate supplies of fuel are made available to meet Canadian requirements.

The Act authorizes a Board membership of seven, including the chairman. The latter is the Chief Executive Officer, has the status of a Deputy Minister, spends full time on the Board's business, receives a salary and is in charge of a public service staff. The other members, men of long experience and expert knowledge of aspects and regions of the Canadian coal industry, receive per diem payments and travelling expenses while attending Board meetings or while otherwise officially engaged on Board business.

In general, the Board and its staff constitute a central agency through which representations on coal matters are made to the Government from any sector of the industry or the public. Conducting a continuous study of developments and problems within the industry, exchanging information with provincial authorities concerned with coal and with national authorities and agencies in other countries and maintaining the most complete files of Canadian coal information in existence, the Board makes recommendations to the Government and reports to Parliament through the Minister of Energy, Mines and Resources. In view of the growing impact of oil and natural gas on the marketa for Canadian coal, the Board and its staff have intensified the study of the relation of the competing sources of energy and of possible new outlets for the solid fuel.

Since its inception, the Board has worked toward the co-ordination of the activities relating to coal of various government departments and other agencies. Its own responsibilities in research on the mining and utilization of coal have been carried out mainly by the Fuels and Mining Practice Division, Mines Branch, Department of Energy, Mines and Resources, although, on occasion, the Board has recommended or commissioned specialized types of research to be conducted outside the government service. As a contribution to the co-ordination of coal research and to the dissemination to the industry of technical information resulting from research, the Board initiated the now annual Dominion-Provincial Conferences on Coal. The Dominion Bureau of Statistics collects much of the statistical information required by the Board.

Government purchases of fuel, which constitute an important outlet for coal, claim a part of the time of the Board's staff in an advisory capacity. Advice on fuel matters is also continuously available to all government departments and agencies. A senior official of the Coal Board is chairman of the Interdepartmental Fuel Committee, which advises on the supply, purchase and utilization of fuel for the Department of National Defence, and of the Dominion Fuel Committee, which is organized along similar lines as an advisory body to other government departments.

The subvention assistance on the movement of Canadian coals, which the Board administers, is authorized from year to year by votes of money by Parliament; payments
are in accordance with Regulations established by Order in Council. This assistance, which has been provided in varying degrees for the past 30 years, was designed to further the marketing of Canadian coals by equalizing as far as possible the laid-down costs of Cansdian coals with imported coals. During the year ended Mar. 31, 1965, a total of $4,857,453$ tons of coal was shipped under subvention and $\$ 21,602,195$ was paid in assistance; in $1965-66$, the figures were $4,533,309$ tons and $\$ 22,363,631$, respectively. Costs and conditions of the coal industry being subject to variations, the Board must review from time to time the rates of subvention and the areas where the assistance is required.

As agent to the Minister of Energy, Mines and Resources, the Board receives applications and administers loans under the Coal Production Assistance Act (RSC 1952, c. 173, as amended by SC 1958, c. 36; SC 1959, c. 39; SC 1960-61, c. 20; and SC 1962-63, c. 13). The Board also administers payments under the Canadian Coal Equity Act (RSC 1952, c. 34), which provides a subsidy on Canadian coal used in the manufacture of coke for metallurgical purposes. In the year ended Mar. 31, 1965, payments under this Act totalling $\$ 212,772$ were made on 429,843 tons of coal and in the following year payments totalling $\$ 134,611$ were made on 271,942 tons.

Emergency Gold Mining Assistance Act.-Under this Act, which came into force in 1948 (RSC 1952, c. 95), financial assistance is provided to marginal gold mines to counteract the effects of increasing costs of production and a fixed price for gold. By enabling gold mines to extend their productive life, the subventions help communities dependent on gold mining to adjust gradually to diminishing support.

In 1963 an amendment extended the provisions of the Act for four years to Dec. 31, 1967 and also introduced a restriction which affects lode gold mines coming into production after June 30, 1965; such mines are eligible for assistance only if the mine provides direct economic support to an existing community, that is, if the majority of the persons employed at the mine reside in one or more of the established communities that are specified in a schedule to the Act. The restriction does not apply to lode mines in production before July 1, 1965 nor to placer gold mines.

The amount of assistance payable to an operator is determined by a formula and is based on the average cost of production per ounce and the number of ounces produced; it ranges from zero to $\$ 10.27$ per ounce produced. Gold mines having a cost of production of $\$ 26.50$ or less per ounce receive no assistance and those having a cost of production of $\$ 45.00$ or more per ounce receive the maximum rate of $\$ 10.27$ per ounce.

Under the current formula the assistance payable to the operator of a gold mine is computed by adding 25 p.e. to the product of two factors, the "rate of assistance" and the number of "assistance ounces" The number of assistance ounces is two thirds of the total ounces produced and sold to the Royal Canadian Mint by a mine in a calendar year. The rate-of-assistance factor is two thirds of the amount by which the average cost of production exceeds $\$ 26.50$. The rate-of-assistance factor is limited to a maximum of $\$ 12.33$ which is reached when the average cost of production rises to $\$ 45$ per ounce of gold produced. The average cost of production is determined by dividing the total allowable costs by the total number of ounces produced in the form of bullion from the mine in a calendar year. Only those ounces of gold that have been sold to the Royal Canadian Mint are eligible for inclusion in the assistance-ounces factor. The cost of production includes mining, milling, smelting, refining, transportation and administration costs. Allowances are made for depreciation, pre-production costs and expenditures on exploration and development on the mine property in accordance with the Regulations.

The amounts paid to operators of gold mines to Mar. 31, 1966 for the years 1948-65, inclusive, totalled $\$ 216,184,450$ on a production of $51,306,777 \mathrm{oz}$. t. of gold produced and sold in accordance with the requirements of the Act. The assistance payable for gold produced and sold under the Act in the calendar year 1965 is estimated to be $\$ 15,300,000$.

The Act is administered by the Department of Energy, Mines and Resources with the aid of the Office of the Comptroller of the Treasury in accounting matters.

## Subsection 2.-Provincial Government Aid*

Newfoundland.-The Newfoundland Government, through the Mines Braceh of the Department of Mines, Agriculture and Resources, provides several valuable services to those interested or involved in exploration and mining, including: the conduct of a continuing program of mineral assessment designed to encourage development of the mineral resources of the province; the inspection of exploration work carried out on concession areas and the examination of mining operations; the administration of beaches (control of removal of sand and gravel as a conservation measure) and the collection of data relevant to the control of sand removal; the identification of mineral rock specimens submitted by the public and the examination of corresponding occurrences where such is warranted; the dispensing of technical advice, in so far as possible, to those who seek such service (i.e., in hydrological problems and on the availability of quarryable peat moss to be removed by permit); co-operation with the Geological Survey of Canada and other Federal Government agencies; and the preparation and publication of data useful for educational and general informational purposes, including the preparation of mineral and rock sample sets. Geological reports, geophysical maps and compilations of general data pertaining to specific areas are procurable at nominal cost and other information from unclassified files is made available to interested parties. Prospector's or miner's permits are issued by the Mines Branch and mining claims are recorded.

Nova Scotia.-Under the provisions of the Mines Act (RSNS 1954, c. 179), the Government of Nova Scotia may assist a mining company or operator in the sinking of shafts, slopes, deeps and winzes and the driving of adits, tunnels, crosscuts, raises and levels. This assistance may take the form of work performed under contract, the payment, of bills for materials and labour, or the guarantee of bank loans. Any such work must be approved by the Department of Mines. Mining machinery and equipment to be used in searching for or testing and mining minerals may be made available through the Government. Such equipment is under the direct supervision of the Chief Mining Engineer.

The Government of Nova Scotia is also empowered to make any regulations considered necessary for increasing the output of coal. Such regulations cover the appropriation, on payment, of unworked coal lands, the operation of coal mines, and loans or guarantees for loans. Close co-operation is maintained with the Federal Government in carrying out federal regulations made to secure increased production and economical distribution of coal from the mines of the province.

New Brunswick.-The Mines Branch of the Department of Lands and Mines has five divisions. The Mineral Lands Division administers the disposition of Crown mineral rights including the issuing of prospecting licences, recording of mining claims, issuing of mining licences and leases and other matters pertaining thereto. Detailed and index claim maps are prepared for distribution. The Mine Inspection and Engineering Division administers the safety regulations governing operations under the Mining Act. All mines are regularly inspected, laboratory facilities are maintained and certain equipment used in mines must be approved by the Division. The Geological Division carries on general and detailed geological mapping and investigation. Maps and reports are prepared for distribution, mineral and rock specimens are examined for prospectors and preliminary examinations of mineral prospects are made when requested and circumstances warrant. The Mine Assessment Division is responsible for the collection of mining taxes and royalties and the preparation of statistics on mineral production. The Bathurst Division serves as recording office for northeastern New Brunswick. In addition, claim maps as well as topographical, geological and aeromagnetic maps are available for perusal and distribution. The staff is prepared to provide information concerning the Mining Act and the use of various types of maps.

[^189]Quebec.-The Department of Natural Resources, through its Mineral Resources Branch, administers general mining in the province, under authority of the Mining Act (SQ 1965, c. 34). The Branch comprises four Divisions-Geological Services, Mining Services, Laboratories, and Pilot Plant.

The work of the Geological Services Division is conducted through a Geological Exploration Service, a Mineral Deposits Service, a Mapping Service and a Water, Gas and Petroleum Service. It is responsible for the geological surveying of Quebec territory, with a view to promoting the development of the province's mineral resources. Yearly expeditions in the field provide information upon which detailed reports on various districts and geological maps are prepared for the use of interested persons. A unique mapping index is maintained through which prospectors may quickly obtain accurate information of value to their operations. The Water, Gas and Petroleum Division conducts hydrogeological surveys in quest of subterranean water and supervises drilling and boring operations undertaken by private companies in search of natural gas and oil.

The Mining Services Division includes an Engineering Works Service, a Mining Titles Service, a Mining Exploration Service and a Mines Inspection Service. It issues prospecting and development permits, grants mining lands for working purposes, and collects fees for mining rights. It is responsible for the inspection of mines, quarries and processing plants to ensure that operations are consistent with regulations and to ensure the safety of mine workers. A trained rescue crew of about 375 members operates as three main groups and nine secondary groups. In addition, all workers in active underground mines are trained in rescue operations. The Department undertakes the construction and maintenance of mining roads as authorized under the Mining Act; it has constructed and paid the full cost of certain highways leading to new mining districts. In addition, to avoid the establishment of slums in the vicinity of mining enterprises, the Department regulates the use of the land and authorizes the building of well-organized residential areas.

Laboratories, operated for the use of prospectors, geologists, engineers and mine operators, include equipment for mineralogy, petrography, the dressing of ore, wet and dry assays, spectrography or X-ray photography. Mineral determinations are made free of charge but the assaying of ore content is subject to a fee; free coupons are issued by the Department to be used by prospectors for payment of assays. The laboratories have patented 12 new processes for the extraction and treatment of minerals and, because of the development of such new metallurgical processes, certain minerals once deemed valueless are now of great commercial importance.

To provide for the future development of the mining industry, scholarships are granted to students wishing to follow a career in geology, mining and metallurgical engineering, as well as to students in hydrology or other relevant fields of science (hydro-electricity, hydraulics or meteorology). The Department, in co-operation with universities in Quebec and Montreal, gives yearly courses in prospecting and lectures are given by departmental geologists and engineers at various points in the province.

Ontario.-The Ontario Department of Mines renders a multiplicity of services of direct assistance to the mining industry within the province. The Mining Lands Branch of the Department handles all matters dealing with the recording of mining claims, assessment work, etc., and the preparation of title to mining lands. As a service to the mining public, individual township maps are prepared and kept up to date showing lands open for staking and recorded and patented claims therein. District Mining Recorders maintain offices at strategic locations throughout the province. The Geological Branch carries on a continuing program of geological mapping and investigation and prepares, for the use of the public, detailed reports and maps of the areas studied. A program is under way, in co-operation with the Geological Survey of Canada, through which the whole province is to be flown and mapped in a series of airborne magnetometer surveys. In many active areas of the province, resident geologists gather and make available to the public information concerning geological conditions, exploration and development within their respective districts. A geologist specializing in industrial minerals investigates
methods of treatment and recovery of such minerals and compiles data on the uses, specifications and markets for such products. During the winter months, courses of instruction for prospectors are held in various centres throughout the province.

The work done by the Laboratory Branch includes wet analyses and assays of metal and rock constituents on a custom fee basis, as well as mineralogical analyses and physical testing. The same service is given free of charge to holders of valid assay coupons issued for the performance of assessment work on mining claims. The Temiskaming Testing Laboratories, situated at Cobalt, operate a bulk sampling plant mainly to assist the producers of the area in marketing their silver-cobalt ores; they also perform fire assays and chemical analyses. The Inspection Branch administers the operating rules of the Mining Act which call for the regular examination of all operating mines, quarries, sand and gravel pits and certain metallurgical works with a view to ensuring proper conditions of health and safety to the men employed. District offices to serve the local areas are maintained in the major mining centres of the province. Mine rescue stations in the principal mining sections are operated under the supervision of the Branch and all hoisting ropes in use at mines are periodically tested by a Branch-operated cable-testing laboratory.

Since 1951 the Department has been engaged in a road-building program to give access to mineralized areas and open them for full development. In 1955 this became an interdepartmental project with other interested departments participating through an interdepartmental committee of Ministers which decides on priorities and locations. Actual construction is carried out by the Department of Highways. The federal-provincial Roads to Resources Program was inaugurated in Ontario in 1959; under the terms of agreement, the federil and provincial governments share equally in the cost of constructing roads to otherwise inaccessible areas (see also the Transportation Chapter, Part III, Section 2).

The Public Relations Office of the Department carries out a regular publicity and information program and maintains a library of films on mining subjects which are available for free loan to the public. Each year, displays pertaining to mining are prepared and presented at the Canadian National Exhibition and elsewhere in the province.

Manitoba.-The Mines Branch of the Manitoba Department of Mines and Natural Resources offers five main services of assistance to the mining industry: maintenance, by the Mining Recorder's offices at Winnipeg and The Pas, of all records essential to the granting and retention of titles to every mineral location in Manitoba; compilation, by the geological staff of the Branch, of historical and current information pertinent to mineral occurrences of interest and expansion of this information by a continuing program of geological mapping; enforcement of mine safety regulations and, by collaboration with industry, introduction of new practices such as those concerned with mine ventilation and the training of mine rescue crews which contribute to the health and welfare of mine workers; and maintenance of a chemical and assay laboratory to assist the prospector and the professional man in the classification of rocks and minerals and the evaluation of mineral occurrences. Manitoba also aids the mining industry by assisting in the construction of access roads to mining districts.

To encourage the exploration for minerals in Manitoba, the Mineral Exploration Assistance Act was passed in April 1966. This Act provides for the payment of grants to individuals to assist in defraying the cost of exploration within designated areas. If assisted exploration results in the discovery of a deposit, the grant is repayable from the profits of the mine; a grant for exploration that proves unsuccessful is not repayable.

Saskatchewan.-Assistance to the mining industry in Saskatchewan is administered by the Department of Mineral Resources. The Mineral Lands Branch of the Department is responsible for administering the Precambrian Assistance Program. This Program,
designed to stimulate development and utilization of the mineralized areas of northern Saskatchewan, offers to industry a 50 -p.c. rebate of approved exploration expenditures on a specified area or property to a maximum of $\$ 50,000$ a year for each individual or company and a maximum of $\$ 150,000$ on any one area or property. This Branch is also respousible for making disposition of all Crown minerals and maintains records respecting areas let out by lease, permit or claim. Recording offices, located at Regina, La Ronge, Uranium City and Creighton, assist the public in determining the lands available and accept applications.

Officers of the Engineering Branch, under the authority of the Mines Regulation Act, make regular examinations of all mines to ensure proper conditions for the health and safety of the men employed. Safety education, particularly in the form of first aid and mine rescue instruction, is also a part of the work of this Branch. All Branch officers are stationed at the Regina headquarters.

The Precambrian Geology Division of the Geological Sciences Branch conducts geological surveys in the shield areas of the province and publishes maps and reports for the information and guidance of the industry. Resident geologists are maintained at Uranium City and La Ronge and at the latter centre a laboratory provides for the storage and examination of core and samples. The Division processes exploration data and assessment work to be made available for inspection by the industry.

Alberta.-Alberta Government assistance to the mining industry is diversified in character. The Mines Division of the Department of Mines and Minerals regulates coal mines and quarries and maintains standards of safety by inspection and certification of workers. The Workmen's Compensation Board also maintains safety standards and trains mine rescue crews. The oil and gas industries are served in a similar way by the Oil and Gas Conservation Board. Its regulatory measures, however, are also concerned with preventing the waste of oil and gas resources and with giving each owner of oil and gas rights the opportunity of obtaining a fair share of production. This Board compiles periodic reports and annual records which are of invaluable assistance in oil development in Alberta. The mining industry is also served by the Research Council of Alberta which has made geological surveys of most of the province and has carried forward projects concerned with the uses and development of minerals. The Council has studied the occurrence, uses and analyses of Alberta coals and their particular chemical and physical properties, the use of coals in the generation of power, and the upgrading and cleaning of coal, and has also studied briquetting, blending, abrasion loss, shatter and crushing strength, asphalt binders and dust-proofing of coal. Studies have been made of glass sands, salt, fertilizers, cement manufacture and brick and tile manufacture. (See also pp. 403-404.)

The province from time to time has had commissions examine various aspects of the mining industry when it has considered that their findings would be of assistance in developing such industries. The province, together with the Canadian Association of Oil Well Drilling Contractors and the Western Canada Petroleum Association, maintains a detailed supervisory and safety training program concerned with the drilling of oil and gas wells. Of assistance also to mining companies and oil companies are the special deductions provided for in the Alberta Income Tax Act. These follow the parallel provisions in the federal Income Tax Act.

British Columbia.-The Department of Mines and Petroleum Resources of British Columbia provides the following services: detailed geological mapping as a supplement to the work of the Geological Survey of Canada; free assaying and analytical work for prospectors registered with the Department; assistance to the prospector in the field by departmental engineers and geologists; grub-stakes, limited to a maximum of $\$ 700$, for prospectors; assistance in the construction of mining roads and trails; and inspection of mines to ensure safe operating conditions.

## Section 3.-Mining Legislation

Federal Mining Laws and Regulations.-As of Jan. 1, 1966, the mineral rights vested in the Crown in right of Canada are those situated in the Yukon Territory and the Northwest Territories, those in the islands in Hudson Bay and under Hudson Bay and Hudson Strait, and those under Canada's continental shelves. There are also some small and usually isolated parcels scattered throughout the provinces. The Department of Energy, Mines and Resources is responsible for the disposition of mineral rights and for the administration and enforcement of regulations relating to minerals in Canada's offshore areas, other than those under Arctic coastal waters, in Hudson Bay, the islands in Hudson Bay, Hudson Strait and the small parcels above mentioned. The Department of Indian Affairs and Northern Development is similarly responsible in the Yukon Territory, the Northwest Territories and the offshore rights under Arctic coastal waters; this Department also acts as adviser to Indian bands in Indian reserves and is responsible for the administration and enforcement of the relevant regulations.

Mineral rights of Indian reserves in the provinces are also vested in the Crown in the right of Canada and are administered by the Indian Affairs Branch of the Department of Indian Affairs and Northern Development. The minerals on an Indian reserve may be developed under the Indian Oil and Gas Regulations or the Indian Mining Regulations for the benefit of the Band of Indians having rights to the reserve, only after the Band has given approval by referendum. Indian Band Councils are encouraged to take a share of responsibility in the management of their mineral resources.

Mining exploration is carried out in the Yukon Territory in accordance with the provisions of the Yukon Quartz Mining Act and the Yukon Placer Mining Act; in the Northwest Territories, including Arctic coastal waters, operations are governed by the Canada Mining Regulations 1961 as amended. There are also the Territorial Dredging Regulations, Territorial Coal Regulations and Territorial Quarrying Regulations common to both territories. In the Yukon Territory, mining rights may be acquired by staking claims under the appropriate Acts or Regulations; 21-year leases may be obtained on claims and such leases are renewable.

Under the Canada Mining Regulations, a prospector's licence is required. Staked claims must be converted to lease or relinquished within ten years. In certain areas, a system of exploration by permit over large areas is allowed. Any individual over 18 years of age or any joint stock company incorporated or licensed to do business in Canada may hold a prospector's licence. No lease will be granted to an individual unless the Minister of the Department involved is satisfied that the applicant is a Canadian citizen and will be the beneficial owner of any interest acquired under such lease; no lease will be granted to a corporation unless the Minister is satisfied that at least 50 p.e. of the issued shares of the corporation are owned by Canadian citizens or that the shares of the corporation are listed on a recognized Canadian stock exchange and that Canadians will have the opportunity of participating in the financing and ownership of the corporation. Any new mine beginning production after the Canada Mining Regulations came into force in 1961 will not be required to pay royalties for a period of 36 months, starting from the day the mine comes into production. Production date is established as the date determined under the provisions of the Income Tax Act.

An exploration assistance fund for petroleum and other minerals in the Yukon and Northwest Territories was established by the Federal Government in 1966. Initially limited to $\$ 3,000,000$ per year, the fund may provide 40 p.c. of the cost of approved exploration programs. Assistance is available only to Canadian citizens or companies incorporated in Canada. Named the Northern Mineral Exploration Program, it is designed to encourage investment from additional Canadian sources previously not attracted to investment in northern exploration operations.

Oil and Gas Legislation.-The Canada Oil and Gas Land Regulations and the Canada Oil and Gas Drilling and Production Regulations, issued pursuant to the Territorial Lands

Act and the Public Lands Grants Act regulate the disposition of oil and gas rights and regulate exploration and development in the Yukon Territory, the Northwest Territories and the offshore areas of the continental shelves, but not under lands within any provinces. Only subsurface rights and those beneath the seabed are granted. When required, surface rights are separately negotiated. Oil and gas exploratory permite are issued for nine, 10 or 12 years according to locality and oil and gas leases with a tenure of 21 years may be acquired from exploratory permits. Leases, which are renewable if oil or gas is still able to be produced, must conform to prescribed land patterns but must not exceed 50 p.c. of the area of an exploratory permit area. Under certain conditions, a permittee may obtain a lease on the other half of the permit area or part of it by paying enhanced royalty which varies according to the location of the permit area.

An oil and gas exploratory permit may be issued to any individual over 21 years of age or to any joint-stock company incorporated or licensed to do business in Canada, or incorporated in any province of Canada. No oil and gas lease granted to a permittee will be issued to an individual unless the Minister of the Department involved is satisfied that the applicant is a Canadian citizen and will be the beneficial owner of any interest acquired under such lease, or to a corporation unless the Minister is satisfied that at least 50 p.c. of the issued shares of the corporation are beneficially owned by persons who are Canadian citizens or that the shares of the corporation are listed on a recognized Canadian stock exchange, and that Canadians will have an opportunity of participating in the financing and ownership of the corporation.

Provincial Mining Laws and Regulations.*-In general, all Crown mineral lande lying within the boundaries of the several provinces (with the exception of those within Indian reserves, National Parks and other lands which are under the jurisdiction of the Federal Government) are administered by the respective provincial governments. The exception is Quebec where all mineral lands except those granted to individuals in the townships prior to 1880 are administered by the province; also mining rights on federal lands in Quebee are administered by the province.

The granting of land in any province except Ontario and Nova Scotia no longer carries with it mining rights upon or under such land. In Ontario mineral rights are expressly reserved if they are not to be included. In Nova Scotia no mineral rights belong to the owner of the land except those pertaining to gypsum, limestone and building materials, and the Governor in Council may declare deposits of either limestone or building materials to be minerals. Such declaration is to be based on economic value or to serve the public interest. In such case, the initial privilege of acquiring the declared minerals lies with the owner of the surface rights who must then conform with the requirements of the Mines Act. In Newfoundland, mineral and quarry rights are expressly reserved. Some early grants in British Columbia, Alberta, Saskatchewan, Manitoba, New Brunswick, Quebec and Newfoundland also included certain mineral rights. Otherwise, mining rights must be separately obtained by lease or grant from the provincial authority administering the mining laws and regulations. Mining activities may be classified as placer, general minerals (or veined minerals and bedded minerals), fuels (coal, petroleum and gas) and quarrying. Provincial mining regulations under these divisions are summarized in the following paragraphs.

Placer.-In most provinces in which placer deposits oceur there are regulations defining the size of placer holdings, the terms under which they may be acquired and held, and the royalties to be paid.

General Minerals.-These minerals are sometimes described as quartz, lode, or minerals in place. With the exception of British Columbia, the most elaborate laws and regulations apply in this division. In all provinces except Alberta and Saskatchewan, a prospector's or miner's licence, valid for one year, must be obtained to search for mineral deposits, the licence being general in some areas but limited in others; a claim of promising ground of a

* Compiled from material supplied by the provincial governments.
specified size may then be staked. In Manitoba and British Columbia a licence is required only for staking and in British Columbia any number of dispositions may be staked under one licence. A claim must be recorded within a time limit and payment of recording fees made, except in Quebec where no fees are required. Work to a specified value per annum must be performed upon the claim for a period of up to ten years except in Quebec where a development licence may be renewed on a yearly basis; also in Saskatchewan there is no work commitment in the first year of the claim. There is no time limit in British Columbia but $\$ 500$ assessment work, of which a survey may represent two fifths, must be performed and recorded before a lease may be obtained. In Quebec, a specified number of man-hours of work must be performed and the excess may be carried forward for renewal of licence. The taxation applied most frequently is a percentage of net profits of producing mines or royalties. In Saskatchewan, subsurface mineral regulations covering non-metallics stipulate the size and type of dispositions that may be made in order to maintain the disposition in good standing, provide for fees, rentals and royalties, and set out generally the rights and obligations of the disposition holder.

Fuels.-In provinces where coal occurs, the size of holdings is laid down together with the conditions of work and rental under which they may be held. In Quebec, the search for and development of petroleum and natural gas may be carried out under a prospecting permit or working lease; the former covers a period of five years and an acreage of not over 60,000 acres, and the latter a period of 20 years and an acreage not over half the acreage of the prospecting permit. In Nova Scotia, mining rights to certain minerals, including petroleum, occurring under differing conditions may be held by different licensees. Provision is sometimes made for royalties. Acts or regulations govern methods of production. In the search for petroleum and natural gas, an exploration permit or reservation is usually required; however, in Manitoba, Saskatchewan, Alberta and British Columbia leases usually follow the exploration reservation whether or not any discovery of oil or gas is made. In Manitoba, Saskatchewan and Alberta, exploration costs are applicable in part on the first year's lease rental and in British Columbia on two years' lease rental. In other provinces, the discovery of oil or gas is usually prerequisite to obtaining a lease or grant of a limited area, subject to carrying out drilling obligations and paying a rental, a fee, or a royalty on production.

Quarrying.-Regulations under this heading define the size of holdings and the terms of lease or grant. In Nova Scotia, sand deposits of a quality suitable for uses other than building purposes and limestone deposits of metallurgical grade belong to the Crown; gypsum quarries belong to the owner of the property. On Quebec public lands and on those granted to individuals after Jan. 1, 1966, the stone, sand and gravel, like other building materials, belong to the Crown; quarries located on land granted to individuals prior to 1966 remain in the possession of the owners of the surface; the right to exploit all building materials except sand and gravel may be acquired by ordinary staking-out and the right to work sand and gravel beds is set by regulation. In Saskatchewan, sand and gravel on the surface and all sand and gravel obtainable by stripping off the overburden or other surface operation belong to the owner of the surface of the land. In Alberta, sand, gravel, clay and marl recovered by excavating from the surface belong to the owner of the surface of the land.

Copies of mining legislation including regulations and other details may be obtained from the provincial authorities concerned.

## Section 4.-Industrial Statistics of the Mineral Industry

The scope of the annual statistics on mineral production published by the Dominion Bureau of Statistics includes a general review of the principal mineral industries such ss the copper-gold, silver-lead-zinc, and nickel-copper industries as well as a section on metallurgical works. Additional data published at irregular intervals include such features as numbers of employees, salaries and wages paid and net value added by processing.

The figures for 'net value added by processing' of industries given in Table 33 are the settlements received for shipments by producers and the additional values obtained when the smelting of ores is completed in Canada, less the cost of materials, fuel, etc. The totals indicate returns to the different industries, or the 'business done' by these industries. These industry series of data are not comparable to the commodity series shown in Table 4, p. 539 where, with respect to copper, lead, zinc and silver, values are computed by applying the average prices for the year in the principal metal markets to the total production from mines and smelters with no reduction for fuel, electricity and other supplies consumed in the production process.

Some imported ores and concentrates are treated in Canadian non-ferrous smelting and refining works, especially in the production of aluminum, where imported ore only is used. The smelting and refining industry is classified as manufacturing and the data relative to that industry are included in the primary metal industry (see Chapter XVI on Manufactures).

3s.-Prineipal Statistics of the Mineral Industry, by Province and by Industry, 1938

\begin{tabular}{|c|c|c|c|c|c|}
\hline Province or Territary and Industry \& Planta or Eatablishments \& Employees \& Salaries and Wagea \& Cost of Procesg Supplies, Fuel, Electricity, Freight and Smelter Charges \& Net Value Added by Processing <br>
\hline Province \& No. \& No. \& \$ \& \$ \& \$ <br>
\hline Newfoundland, \& 20 \& 4,923 \& 28.407,611 \& 48,580,275 \& 79,599,611 <br>
\hline Prince Edward Lslaud. \& 3 \& 37 \& 123,106 \& 15, 45.941 \& 298,446 <br>
\hline Novs Scotis. \& 42 \& 7,195 \& 28,853,678 \& 15,218,356 \& 45,808, 128 <br>
\hline New Brunavick \& 47 \& 1,498 \& 5,293,936 \& 6.450,104 \& 11,665,758 <br>
\hline Quebee. \& 467 \& 23,750 \& 119,170,934 \& 121,372,514 \& 326, 158, 566 <br>
\hline Ontario. \& 544 \& 31,591 \& 157,397,878 \& 107,580,800 \& 363,843,386 <br>
\hline Manitoba \& 77 \& 4,415 \& 23,883, 858 \& 7,103,696 \& 36,677,683 <br>
\hline Saskatebewan. \& 159 \& 2,841 \& 17,720,649 \& 13,602,419 \& 224,331,834 <br>
\hline Alberta. \& 312 \& 6,071 \& 35,099, 282 \& 17,651,247 \& 593,734, 872 <br>
\hline British Columbia \& 212 \& 6,938 \& 37,273,515 \& 54, 845,855 \& 150,768,746 <br>
\hline Yokon Territory \& 35 \& 906 \& 5,529, 813 \& 3,003,491 \& 10,474,752 <br>
\hline Northwest Territories \& 19 \& 847 \& 4,702.754 \& 3,568,229 \& 12,493, 081 <br>
\hline Canada. \& 1,937 \& 21,012 \& 463,457,014 \& 359,033,027 \& 1,855,854,863 <br>
\hline Industry \& \& \& \& \& <br>
\hline Metallies. \& 519 \& 58,778 \& 312,373,113 \& 307,161,997 \& 746,456,880 <br>
\hline Placer gold \& 30 \& 210 \& 1,221,942 \& 251,638 \& 1,950,329 <br>
\hline Gold quartz \& 122 \& 15,120 \& 83,095,590 \& 27,643,451 \& 99,259,218 <br>
\hline Copper-gold-silver \& 176 \& 11,536 \& 58,514,522 \& 79,680,132 \& 150, 193, 178 <br>
\hline Silver-cobalt. \& 21 \& 705 \& 8,003,602 \& 1,364,853 \& 5,591,773 <br>
\hline Silver-lead-zine \& 61 \& 4,638 \& $24.885,947$ \& 55,524,972 \& 70,252,882 <br>
\hline Nickel-copper \& 26 \& 12,110 \& 68,080,258 \& 26,587,731 \& 85,523,703 <br>
\hline Iron. \& 48 \& 9,993 \& 65,646, 688 \& 90, 328,431 \& 215,048,674 <br>
\hline Miscellaneons metadi \& 35 \& 4,468 \& 27,924,566 \& 25,770,789 \& 118,042,123 <br>
\hline Non-metallies. \& 149 \& 11,773 \& 55,767,258 \& 40,433, 301 \& 184, 138,957 <br>
\hline Asbestos. \& 17 \& 6, 823 \& 35,507,888 \& 23,912,435 \& 118,085,686 <br>
\hline Feldspar, quartz and nepheline ayenit \& 20 \& 381 \& 1,564,114 \& 1,029,679 \& 5,302,504 <br>
\hline Gypsum \& 9 \& 680 \& 2.876,245 \& 2,716,050 \& 7,129,679 <br>
\hline \& 9 \& 12 \& -37,960 \& -8,617 \& - 36,836 <br>
\hline Salt. \& 11 \& 1.482

955 \& +4,566,868 \& 2,703,069 \& 17,985,528 <br>
\hline Talc and soapstone \& 4 \& 79 \& 276, 676 \& -173, 883 \& +661,792 <br>
\hline Miscellaneous non-metallic \& 23 \& 1.361 \& 6,985, 473 \& 5,433,967 \& 29,594,554 <br>
\hline Fuels. \& 731 \& 14,743 \& 72,021,056 \& 38,059,873 \& 844,336,135 <br>
\hline Coal..................................... \& 97 \& 8,903 \& 35,624+266 \& 16.741,730 \& 54, 553,347 <br>
\hline  \& 634 \& 5,840 \& 36,396,790 \& 21,318,143 \& 789,782,788 <br>
\hline Structural Materials \& 538 \& 5,718 \& 23,205,587 \& 13,377.856 \& 77,925,581 <br>
\hline Sand and gravel. \& 331 \& 2,266 \& 9,249,454 \& 3,656,301 \& 38,880,676 <br>
\hline Stome. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . \& 207 \& 3,452 \& 14,048, 133 \& 9,721,555 \& 39,045,205 <br>
\hline
\end{tabular}

## Section 5．－World Production of Certain Metallic Minerals and Fuels

Table 34 shows the production of certain metallic minerals and fuels in the different countries of the world for the year 1964．These figures are taken from the United Nations Statistical Yearbook 1965 which presents production figures for a much more extensive list of mining and quarrying industries．The 1964 figures are provisional and have been converted from kilograms to ounces troy for gold，from metric tons to ounces troy for silver， and from metric tons to short tons for the other metals and fuels shown．

## 34．－World Production of Certain Metallic Minerals and Fuels， 1964

Nore．－Where dashes occur throughout this table they indicate that no figures were given in the United Nolions Statistical Yearbook either because there was no production or because the quantity was not available．

| Country | Gold | Silver | Copper | Iron | Lead | Zinc | Cosl | Crude Petrolerm |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | ${ }^{\prime} 000$ oz．t． | ＇000 0z．t． | ＇000 tons | ＇000 tons | ＇000 tons | ＇000 tons | ＇000 tons | ＇000 tons |
| Atghanistan． | － | － |  | － | － | － | 124.6 | － |
| Albanis． | － | 二 | 1.1 | 1，569．7 | 10.7 | 41.2 | 38.6 | 28，910．3 |
| Angola． |  |  | ． | 622.8 |  |  |  | 997.6 |
| Argentina． | 0.3 | 1，945．1 |  | 49.6 | 28.5 | 25.2 | 369.3 | 15，817．1 |
| Australia． | 963.8 | 18，274．5 | 113.9 | 4，094．0 | 419.9 | 386.0 | 30.722 .5 | 208.3 |
| Austria． |  |  | 1.8 | 1，243．4 | 6.5 | 10.8 | 113.5 | $2,935.5$ |
| Bahrain． | － | － | 二 | $\overline{20.9}$ | 二 |  | 23，484．7 | 2.712 .8 |
| Belgium | $\bigcirc 0.7$ | 4，854．81 | 5.21 |  | 19.51 | 10.81 | － | 459.7 |
| Brazil．． | － | － | 3.1 | 11，243．6 |  | － | 1，854．1 | 1，798．4 |
| Britain． | － | － | － | 4，937．3 | 0.2 | － | 216，362．12 | 142.2 |
| Brunei． | － | － |  |  |  |  | 671.3 | 3，900．6 |
| Bulgaria |  |  | 22.5 | 283.3 | 111.4 | 88.3 | 671.3 11.0 | ${ }_{6} 175.1$ |
| Curmada | 3，835．4 | 29，902．6 | 0.1 486.9 | 22，884．3 | 20.8 203.7 | 8.9 88.5 | 11，319．3 | 40，850．7 |
| Central Alrican Republic．${ }^{\text {a }}$ | 3，80．1 | 20．30．0 |  | 2，881．3 |  |  |  |  |
| Chile．．．．．．．．．．．．．．．．．．．．．．． | 65.6 | 2.954 .7 | 878.3 | 7，011．8 | 1.1 | 1.0 | 1，758．2 | 1，966．5 |
| Maintan | － | － | 99.2 | － | 110.2 | 110.2 | － | － |
| Taiwan． | 17.7 |  | 1.9 | － |  | 二 | 5，542．4 | 9.9 |
| Colombia． | 385.0 | 131.8 | － | 385.8 | － | － | 3，306．9 | 9，431．4 |
| Conigo－ Brazzaville | 3.5 | － | － | － | 2.4 | 5.6 | － | 92.8 |
| Democratic Republic of |  |  |  |  |  | 115.4 | 110.2 |  |
| Cuban．．．．．．．．．．．．．．．．．．．．．． | 223.3 | 1，478．9 | 305.7 6.6 | － | － | 115.4 | 10.2 | 11.0 |
| Сургия． | － | － | 18.5 | － | 14 |  | $\overline{08}$ | 215.0 |
| Czechoslova | $\square$ |  | 一 | 874.1 | 14.9 |  | 31，08．4 | 406.8 |
| Eeuador | 16.8 | 115.7 | － | 二 | － |  |  |  |
| Finland．． | 22.1 | 607.6 | 38.7 | 338.4 | 2.9 | 86.0 |  |  |
| France．．．．．．．．．．．．．．．．．．．． |  | － | $\cdots$ | 21，831．3 | 13.0 | 18.8 | 58，455．6 | 3，137．2 |
| Gabon． | 42.8 | $\rightarrow$ | － | － | － | － |  | 1，160．2 |
| Germany－ | $\cdots$ |  | 25.4 | 540.1 | 11.0 | 11.0 | 2，579．4 |  |
| Federal Republic of．．．．． | 108.8 | 11，580．7 | 1.8 | 3，082．1 | 53.9 | 122.6 | 157，304．2 | 8，458．0 |
| Gbang．．．．．．．．．．．．．．．．．．．．． | 864.9 | － | － | 二 | 二 | 二 | 27.6 | 二 |
| Greenland | 二 | 二 | 二 | 二 | 0.2 | － | $\cdots$ | － |
| Guinea | － | 二 | 二 | 422.2 | － | － | － |  |
| Guyana（formerly British |  |  |  |  |  |  |  |  |
| Guians）．．．．．．．．．．．．．．． | 1.9 | － |  | － | － |  |  |  |
| Honduras | 3.2 | 3，218．3 | 6． |  | 6.01 | 6.24 | － | － |
| Hong Kong | － | － |  | 71.7 |  |  |  | 1，985．3 |
| Hungary | － |  | 0.3 | 13， 2084.2 | 5.1 | 8.2 | 68，828．3 | 2.438 .3 |
| India．．． | 148.0 | 151.1 | 11.6 | 13，684．1 | 5.1 | 6.8 | $68,828.3$ <br> 9.6 | 25，719．1 |
| Indonesia．．． West Irian． | － | － |  |  |  |  |  | 97.0 |

For footnotes，see end of table．
34.-World Production of Certain Metallic Minerals and Fuels, 1384-concluded


[^190]

Salmon became an important commercial product on the Canadian West Coast in the early 1880s and is still supreme among the nation's fishery products. Commercial fishermen alone catch between 16,000,000 and 22,000,000 salmon each year as they migrate to over 1,300 rivers and streams along the jagged coastline of British Columbia. This is a self-perpetuating resource of tremendous potential -wisely managed, it can produce wealth for the country forever.

## CHAPTER XIV.-FISHERIES AND FURS

## CONSPECTUS

|  | Page |  | Page |
| :---: | :---: | :---: | :---: |
| Part I.-Fisheries. | 597 | Subsection 1. The Federal Government. . | 609 |
| Section 1. The Drvelopment of Canada's |  | Subsection 2. The Provincial Governments. | 613 |
| SEA FISEERIES............... | 597 |  |  |
| Bection 2. Commercial Fiseing and |  | Part II. -Furs. | 622 |
| Marketing, 1965 | 589 | Section 1. The Fur Indugt | 622 |
| Section 3. Fighery Statiaticg | 601 | Section 2. Fur Statistics. | 624 |
| Subsection 1. Primary Production | 601 | Subsection 1. Fur Production and Trade, | 624 |
| Subsection 2. Fish Products. . . . . | 604 | Subsection 2. The Fur Processing Industry | 628 |
| Sbetion 4. Governdents and the Fisheries. $\qquad$ | 607 | Section 3. Provineral and Territorial. Fur Resource Management... | 629 |

The interpretation of the symbols used in the tables throughout the Year Book will be found on $p$. witi of this wolume.

## PART I.-FISHERIES*

## Section 1.-The Development of Canada's Sea Fisheries

The vast prolific fishing grounds off Canada's Atlantic Coast have been of great economic value since the early days of settlement of the North American Continent. The heaviest landings by Canadian fishermen today are taken from these waters which first attracted Europeans in the late fifteenth century. Codfish so plentiful they could be lifted out of the ocean by the basketful were reported by navigator John Cabot when he returned from his 1497 voyage in quest of new lands for Henry VII of England. In those days, salt cod was something of a luxury food in England, its value being reckoned as high as 50 shillings a hundredweight as compared with four shillings and eightpence for meat. Markets for dried cod were also assured in the warm countries of the Mediterranean where there was a scarcity of storable protein foods and, as a consequence, it was profitable to send fishing vessels 2,000 miles over the sea to harvest the rich cod stocks off Newfoundland.

From the beginning, competition was keen among fleets of England, France, Spain and Portugal but the English eventually succeeded in dominating the fisheries, particularly in inshore areas. French operations were diverted to the offshore banks and the more remote areas of the Gulf of St. Lawrence, while Spain and Portugal were gradually eliminated from the fishery as a result of aggressive activity by the English.

Valuable fishery bases were first established by settlers in New England, and Nova Scotia assumed importance as a base of fishing operations after the movement of population from New England in the mid-eighteenth century. However, efforts to establish shore settlements in Newfoundland as operating bases were discouraged by English interests and expeditions of fishing fleets from that country continued until settlement in the island was finally sanctioned in the early nineteenth century and a resident population began to make its influence felt in the industry.

[^191]Access to shore facilities in British North America for bait and other supplies and for curing the catch was a long contentious subject for the countries engaged in the west Atlantic fisheries, particularly between Britain on the one hand, and France and the United States on the other. The Treaty of Versailles (1783) granted St. Pierre and Miquelon to France and took away some but not all of the French fishing rights off the Newfoundland coast. French operations expanded on offshore grounds in the mid-1800s as a result of subsidization and the development of the trawl-line or bultow, but Newfoundland countered this competition by restricting, through legislation, the sale of bait to foreign fishermen. Thus, the fishing rights of the French on parts of the Newfoundland coast continued to present problems until they were purchased by Britain early in the present century.

The Versailles treaty also imposed restrictions on the United States fishing operations based in New England, and the Convention of 1818 restricted American rights in the territorial waters of the British colonies to those of "shelter and of repairing damages, of purchasing wood and obtaining water and to no other purpose whatsoever" Numerous clashes resulted from these restrictions, instigated by trading interests in Nova Scotia as a check on smuggling. However, conflict over American fishing rights was eased by the Reciprocity Treaty (1854-66) and the Treaty of Washington (1873-85). Under a modus vivendi negotiated in 1888, American fishermen, on payment of a licence fee, were permitted to use Canadian and Newfoundland harbours for the purchase of supplies, transshipment of catches and shipping of crews, an arrangement that continued until 1918; a treaty which was intended to replace that "temporary" arrangement was never concluded. Meanwhile, the principal source of conflict with the United States had disappeared with the decline of the New England salted fish industry. In Canada and Newioundland, however, salted and dried fish-principally cod, with herring and mackerel of equal importance in certain districta-remained the staple product of the industry until the 1940 s. Production of dried salted cod in the Atlantic Coast fisheries was at its peak in the 1880 s, and began its decline with the disappearance of wooden shipping and the weakening of markets in the West Indies and other southern countries followed by increasing competition from other food products and the appearance of outlets for fresh fish.

Temporary revival was enjoyed by the dried salted codfish industry during the First World War, but in the immediately following years, producers in the Atlantic region, especially Newfoundland, were forced to seek new markets as European fleets had resumed production. Newfoundland fish was diverted to the West Indies, where competition with Nova Scotia, the traditional supplier, forced fish prices down by 50 p.c. between 1926 and 1939, with disastrous results for fishermen of both provinces. Another period of revival came during the Second World War but by 1945 the frozen fish industry began its upward climb and the dried cod trade declined just as steadily.

Development of commercial fisheries on the Pacific Cosst was of much more recent origin than that of the Atlantic industry. Settlement had to come first and exploitation of fisheries resources on a commercial scale developed only in the mid-1800s. Growth of the industry was rapid and extensive as a result of the application of technological and transportation advances. Completion of the transcontinental railway to British Columbia in 1885 opened up populous Eastern Canada markets to fresh and frozen Pacific salmon and halibut. By the turn of the century, an active halibut fighery had developed and expanded to offshore grounds. The bait requirements of the halibut fishery in turn enabled the herring fishery to develop on a considerable scale.

The progress of the Canadian fishing industry through the past century may be said to have been characterized by a shift in the principal methods of preserving and storing fish and shellfish, emphasis changing from curing to canning, chilling and freezing. Canning of fish was first introduced in Cansda about 1840, when factories were built in Maritime centres for the canning of salmon and lobster. Lobster canning took on increasing importance in the 1870 and expanded at a phenomenal rate, the number of canneries rising from 44 in 1873 to a peak of 917 in 1900. Later, competition and economic
conditions brought about a gradual reduction, accelerated more recently by the use of aircraft to transport live lobster to markets in Central Canada, the United States and Europe. Today, only about 50 canneries remain, but canned lobster, which includes heat-processed and fresh and frozen meat, is still the most valuable canned product produced in the Atlantic Provinces, although an important industry is centred in New Brunswick where young herring are canned and marketed as sardines.

The canning of salmon in British Columbia began about 1870, pioneered in part by individuals and firms with experience gained in lobster canning on the Atlantic Coast. These canneries, established at the mouths of rivers and inlets where salmon was caught, increased rapidly in number and output; by 1917 there were $9+$ in operation with an annual output exceeding $1,500,000$ cases. However, salmon canning quickly developed into a streamlined operation featuring a high degree of mechanization and therefore a reduced labour force. This led to amalgamation of canning firms and the growth of large business organizations, so that today there are only about 20 canneries in production.

The development of filleting and quick-freezing techniques and improvement in transportation facilities gave strong impetus to the frozen fish industry in the inter-war period but scarcity of capital and restrictions on trawling operations hampered its growth. Some progress was made, notably in Nova Scotia, which succeeded in expanding sales of chilled groundfish fillets, live lobster and some other items. Processing and fisbing bases were concentrated at the larger ports such as Halifax and Lunenburg. Concentration of operations in larger ports was also a distinguishing feature of the British Columbia industry in this period, but the process of mechanization and business integration outpaced the Atlantic Coast fisheries; a progressive approach and the amalgamation of plant and business organization provided the large-scale capital investment required. Unionization became another important factor in the British Columbia industry during the Second World War.

In the postwar period the Atlantic industry began extensive programs to expand productive capacity Aided by the relaxation of government restrictions on the use of trawlers, fishery firms invested in the construction or purchase of larger vessels to replace the old-style dory or banking schooners used in offshore fishing. Freezing plants were built to process the increasing quantities of groundfish sold fresh by trawlers and inshore fishermen. Increased government subsidization, both federal and provincial, aided the construction of many new trawlers at Canadian shipyards. After Newfoundland became a province of Canada in 1949, the shift from salted codfish to fresh and frozen fish production in that province was speeded up by an inflow of public works improvements, financial aid to the industry and to fishermen, and expanded development and research projects. Other measures of assistance to the industry, involving cost-sharing on such projects between the federal and provincial governments, have been inaugurated under terms of the federal Fisheries Development Act passed in 1966 (see p. 608).

## Section 2.-Commercial Fishing and Marketing, 1965

Records for landed weight and value, exports and returns to fishermen were established in 1965. Canada's commercial fisheries, an industry that helped to shape the early development of civilization in North America, continue to be a valuable source of food and other products for the domestic and export markets, and provide a hardy but rewarding livelihood for many Canadians. The economic and sociological impact of the industry is, of course, most significant in the coastal and lake regions where some 80,000 fishermen participate in actual fishing, a number that has changed little in the past decade. The number of persons employed in fish processing plants has also shown little fluctuation, totalling about 15,000 .

Founded upon cod, herring, salmon and lobsters-products in heavy demand in North American and European markets-the Canadian fishing industry in the mid-1960s is reaping the benefits of advancing technology and increased investment in catching and
processing equipment. In 1965, the market value of all fisheries production surpassed $\$ 300,000,000$ for the first time and, with shipments valued at a record $\$ 213,000,000$, Canada ranked second only to Japan among world fish exporters. Total landings of $2,400,000,000 \mathrm{lb}$. of all apecies of marine life, the heaviest ever recorded, grossed an estimated $\$ 153,000,000$ to the fishermen. These records were accomplished despite stiffening competition from other nations fishing on the same grounds and using even more powerful and more heavily mechanized vessels. There is, however, in progress in Canada a program of vessel construction and mechanization which should soon eliminate this disadvantage to Canadian fishermen.

In general, the year 1965 was a good one for commercial fishermen. In terms of both quantity and value, the increase over 1964 was about 3 p.c., although this increase was not enjoyed by all segments of the industry. In British Columbia, landings were lower than in 1964 but on the Atlantic Coast results were very good. No signigeant changes were noted in the freshwater fisheries.

The salmon fishery in British Columbia yielded only $86,000,000 \mathrm{lb}$., one of the lowest catches on record, and the canned salmon pack amounted to 913,000 cases compared with $1,255,000$ in the previous year. The one bright spot in the salmon fishery was the troll fishery for coho. Halibut landings were slightly lower than in 1964 but prices to fishermen averaged a record 34 cents a pound and the landed value of $\$ 12,600,000$ was the highest ever reported. Herring catches for the year were down by 12 p.c. from 1964 but increased returns to fishermen boosted the landed value slightly higher than in the earlier year. A strike of herring fishermen for a month and a half at the start of the winter season contributed to the lower production. Fishing for groundfish, other than halibut, continued to expand in 1965 ; landings totalled $39,000,000 \mathrm{lb}$, an increase of 30 p.c. over the previous year.

On the Atlantic Coast, total landings reached $1,650,000,000 \mathrm{lb}$., valued to fishermen at $\$ 94,000,000$; this was an increase in production of $150,000,000 \mathrm{lb}$. and in value of $\$ 10,000,000$. Redfish, flounder and herring were the species showing a significant increase in volume and these species, together with scallops and lobsters, accounted for most of the increase in value. Landings and landed values in each province of the Atlantic region were higher than in 1964, although certain groups of fishermen, notably the inshore fishermen of some areas of Newfoundland and lobster fishermen along the Northumberland Strait, suffered declines in catch and income. In Newfoundland, considerably lower landings of inshore cod and lobster were more than offset by higher catches of flounder, redfish, turbot and herring. In Nova Scotia, landings were up 14 p.c., mainly because of higher catches of cod, redfish, herring and scallops; landed value rose by 18 p.c. Most of the increase in catch in New Brunswick was due to higher landings of herring. Prince Edward Island and Quebec were the only provinces reporting larger lobster catches than in 1964 ; total landings increased by 15 p.c. and 8 p.c., respectively, and value by 30 p.c. in each province.

For several years the output of Canada's primary fishing industry has been remarkably stable and has not moved, in any recent year, very far from $1,000,000$ tons. Within each year a decline in the landings of one species, or one group of species, has been generally offset by an increase in the catch of others, leaving the total output unaffected. In addition, of course, many important species are subject to management control, which minimizes the variations in quantities caught each year. The requirements of the markets, however, have been growing slowly but steadily, especially in North America. About $10,000,000$ people have been added to the population of this Continent in the past five years. During this period, per capita yearly consumption of fishery products has been about 12 lb ., so that the additional $10,000,000$ people created a demand for about $120,000,000 \mathrm{lb}$. of processed fish, or $250,000,000 \mathrm{lb}$. of raw material in the form of fish and shellfish. This interaction of a relatively inexpansible supply and expanding demand bas resulted in a steadily rising price level for fishery products; in 1965 the value of exports of all fishery products was $\$ 213,000,000$, in 1964 it was $\$ 202,000,000$ and in 1961, $\$ 143,000,000$, Thus, in five years the value of such exports increased by almost 50 p.c.

The United States continues to be the most important market for Canada's fishery products, sales to that country in 1965 accounting for about 70 p.c. of the total value of such exports. This high percentage is partly accounted for by the fact that a substantial proportion of the exports to the United States are high-priced products such as lobsters in shell and lobster meat, scallops, swordfish, whitefish, lake trout and salmon. Virtually all of Canada's exports of fresh and frozen products from the Atlantic and inland provinces and a substantial share of those from British Columbia are sold in that country.

Exports to European countries in recent years have amounted to about one fifth to one third of the value of exports to the United States. Because of the gradual decline in the volume of salted fish exported to the traditional markets of Spain, Portugal and Italy, the products of the British Columbia industry have dominated the market. In 1965, exports of Canadian fishery products to Europe were valued at $\$ 39,400,000$, of which $\$ 22,800,000$ came from British Columbia. Sales of canned salmon have recently accounted for upwards of 50 p.c. of all fishery exports to Europe; the peak was reached in 1964 when canned salmon made up 55 p.c. of the total of $\$ 46,000,000$. The low salmon catch in 1965 affected the exports of the canned product for that year, the total value being only $\$ 18,600,000$, of which $\$ 10,800,000$ worth went to Britain.

The Caribbean area is a market for low-priced species prepared in inexpensive forms to meet the requirements of population having relatively low purchasing power. Traditional products are salted codfish, pickled mackerel and alewives and bloaters. Exports to this area in 1965 had a value of $\$ 17,400,000$ and showed little change in either value or product components from earlier years, although interruptions to commercial relationships occasioned by political disturbances occurred in some markets during the year.

## Section 3.-Fishery Statistics

The review of commercial fishing and marketing given in the preceding Section covers the situation in 1965 and contains estimated figures for that year. However, at the time of the preparation of this Chapter, the latest statistics available in detail for both the primary production and fish products were those for 1964 contained in the following Subsections.

## Subsection 1.-Primary Production

The value of the 1964 catch of fish on the Atlantic Coast was at a very high level; it amounted to $\$ 87,455,000$, an increase of 15 p.c. over the 1963 value of $\$ 76,174,000$ and 26 p.c. over the five-year $1960-64$ average of $869,228,000$. The lobster catch was somewhat lighter in 1964 than in the previous year but was still the most valuable at $\$ 24,244,000$; cod was second at $\$ 22,055,000$.

For the third consecutive year, the value of the catch by Newfoundland fishermen was substantially higher than that of the previous year. The value of landings of all species amounted to $\$ 21,978,000$, of which cod accounted for $\$ 13,691,000$. Cod landings at $369,601,000 \mathrm{lb}$. were lighter than in 1963 , as were those of redfish and haddock.

The value of fish and shellfish landings by Nova Scotia fishermen in 1964 was $\$ 40,977,000$, a record level 17 p.c. above 1963 . Lobsters and scallops continued to be the most important species from the standpoint of income to the fishermen, having a landed value of $\$ 11,996,000$ and $\$ 7,025,000$, respectively. Haddock was third at $\$ 5,394,000$, followed by cod, swordfish, flounder and sole, pollock and halibut. New Brunswick fishermen also landed a more valuable catch in 1964 than in 1963, although the increase was not as spectacular. Lobsters, herring and cod were the major sources of income to the fishermen, accounting for $\$ 7,438,000$ of the total value of $\$ 10,277,000$. The herring catch, which fluctuates widely from year to year, was $150,792,000 \mathrm{lb}$. in 1964 compared with the five-year 1960-64 average of $116,660,000 \mathrm{lb}$. Returns to Prince Edward Island fishermen in 1964 were $\$ 5,642,000,26$ p.c. above the 1963 level. Lobsters, at
$\$ 4,212,000$, made up 75 p.c. of the total and oysters, at $\$ 370,000$, were next in importance. The value of Quebec landings in 1964 was little changed from 1963; a decrease in the value of cod taken was more than offset by an increase for redfish.

The value of British Columbia landings in 1964 was $\$ 48,301,000$, 19 p.c. higher than in 1963 but below the 1962 level. With salmon making up over half the total, the annual Guctuations in the volume of salmon species taken materially affect the total value of the catch. Landings of all species of salmon in 1964 amounted to $124,198,000 \mathrm{lb}$. compared with $119,324,000 \mathrm{lb}$. in the previous season. Chum, spring, coho and sockeye were all up. Herring landings on the other hand were 12 p.c. lower and had a value of $\$ 6,167,000$. Halibut landings were also lower but higher unit values resulted in an increase in value from $\$ 8,249,000$ to $\$ 8,309,000$. The 1964 catch of tuna at $249,000 \mathrm{lb}$. was well below the record eatch of $487,000 \mathrm{lb}$. in 1962 .

## 1.-Quantity and Value of Sea and Inland Fish Landed, by Province, 1960-64

Nore,--Figures for the years 1918-59 are given in the corresponding table of previous Year Books beginning with the 1947 edition.

| Province or Territory | 1960: | $1981{ }^{1}$ | 1862: | 1963 ${ }^{\text {r }}$ | 1964p |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity |  |  |  |  |
|  | '000 lb. | '000 lb. | '000 lb. | '000 lb. | '000 lb. |
| Newfoundland. | 573,771 | 503,079 | 549,341 | 594,961 | 583,381 |
| Prince Edward Island. | 42.283 | 36, 684 | 37,630 | 38,464 | 41,015 |
| Nova Scotis. | 428,840 | 439,662 | 435,903 | 427, 127 | 514,703 |
| New Brunswick | 232,662 | 147,925 | 204,511 | 234,888 | 254,027 |
| Quebec, | 98,851 | 109,174 | 133.443 | 132,773 | 138,733 |
| Ontario. | 47,600 | 54,951 | 83,780 | 54,342 | 43,508 |
| Manitoba | 31,944 | 30,658 | 36,105 | 35.738 | 28,6.36 |
| Saskatchewsu. | 14,530 | 14,515 | 14,999 | 14,089 | 14.306 |
| Alberta. | 15,852 | 11,317 | 9,025 | 8,509 | 12,751 |
| British Columbis...... Northwest Territories. | 335,040 5,613 | 635,650 5,676 | 688,9181 6,544 | 772,8591 6.347 | $713,2491,2$ 5,960 |
| Totals. | 1,826,985 | 1,485,171 | 2,178,193 | 2,320,497 | 2,315,24 |
| Sea Fish. | 1,702,892 | 1,806,098 | 2,041,168 | 2,106,270 | 2,234,769 |
| Inlsnd Fish. | 123,094 | 123,073 | 137,031 | 123,827 | 110,480 |
|  | $V_{\text {aldi }}$ |  |  |  |  |
|  | \$'000 | \$ 000 | \$000 | \$'000 | \$000 |
| Nersfoundland. | 15,713 | 14,717 | 17,222 | 20,086 | 21,978 |
| Prince Edward Ialand. | 4,478 | 4,173 | +4,361 | -4,462 | 5,642 40,977 |
| Nova Scotis.. | 25,231 | 27,152 | 30.828 | $\xrightarrow{3,145}$ | ${ }_{10} 987$ |
| New Brunswick | 9,320 | 7,699 | ${ }_{5}{ }_{5} 182$ | g, 879 | 5,894 |
| Quebec. | 4,390 | 4,609 | ${ }_{3} .341$ | 5,498 | 5,222 |
| Ontario... | 4,983 <br> 3,867 | $\mathbf{5}, 746$ 3,174 | 3.341 | 4,356 | 3.720 |
| Manitobs...... | 3,867 | 3,174 1,385 | 1,478 | 1,300 | 1,490 |
| Alberta....... | 1,159 | 1888 | 714 | 676 | ${ }^{799}$ |
| British Columbia | 27,962 | 38,778 | 49,0671 | 40, $466^{1}$ | 48, 3268., ${ }^{\text {a }}$ |
| Northwest Territories. | 700 | 675 | 859 | 796 | 808 |
| Totals | 99,170 | 109,051 | 123,915 | 127,984 | 145,133 |
| Sea Fish. | $\begin{aligned} & 86,405 \\ & 12,765 \end{aligned}$ | 98,600 | 115,570 | 114, 687 | 132,482 |
| Inland Fish. |  | 12,451 | 13,345 | 13,297 | 12,701 |

[^192]2 Includes $930,000 \mathrm{lb}$. valued at $\$ 25,000$ landed in Yuloo
2.-Quantity and Value of the Chief Commercial Fish Landed, 1963 and 1964

| Area and Species | Quantity Landed |  | Value Landedz |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 1963: | 1964 | 1963 5 | 1964 |
|  | '000 lb. | '000 lb. | \$000 | \$ 000 |
| Groundflst. | 1,04\%,783 | 1,021,393 | 36,356 | 40,195 |
| Catfish. | 2,950 | 3,248 | 91 | ${ }^{99}$ |
| Cod.... | ${ }^{609.722}$ | 571.412 | 20,997 | 22,055 |
| Fiounder and aole | 125,847 90,981 | 161.856 106,311 | 3,994 | 5,236 6,228 |
| Hake......... | 18,425 | 18,606 | , 518 | , 574 |
| Halibut. | 4,926 | 4,560 | 1,800 | 1,446 |
| Pollock. | 56,580 | 56,957 | 1,712 | 1,872 |
| Redísh. | 83,274 | 80,186 | 2,219 | 2,370 |
| Other. | 10,268 | 18,256 | 310 | 555 |
| Pelagic and Estuarial. | 317,011 | 383,807 | 9,14* | 10,888 |
| Alewives... | 11,320 | 10,511 | 182 | ${ }^{150}$ |
| Herring. | 252,703 | 312.883 | 3,084 | 3,210 |
| Mackerel | 17,199 | 23,811 | 704 | 949 |
| Salmon. | 4,052 | 4,533 | 1,834 | 2,073 |
| Smelts. | 3,147 | 4,141 | 227 | 315 |
| Swordfish | 12,589 | 11,855 | 2,594 | 3,561 |
| Other. | 16,001 | 15,973 | 504 | 630 |
| Molluses and Crustaceans. | 23,604 | 30,828 | 28,289 | 32,521 |
| Clams- |  |  |  |  |
| Quabsurs. | ${ }^{423}$ | ${ }_{2} 304$ | 24 | 16 |
| Soft-shelled | 2,196 44.373 | ${ }_{41}^{2,911}$ | ${ }_{21}^{111}$ | - 158 |
| Oystars. | 4,286 | 3.828 | 21,478 | 24,461 |
| Scallops. | 16,217 | 16,682 | 6,256 | 7,278 |
| Other. | 6,109 | 25,217 | 136 | 454 |
| Other. | ** | *** | 2,400 | 3,751 |
| Totak, Atlantic Coast. . . . . . . . . . . . . . . . . . . | ** | $\cdots$ | 76,174 | 87,455 |
| Pacific Coast |  |  |  |  |
| Groundfish | 54,671 | 57,361 | 9,556 | 10,065 |
| Cod...... | 6,756 | 12,009 | 41. | 722 |
| Halibuti. | 37,274 | 33,292 | 8,249 | 8,309 |
| Ling cod. | 3,238 | 3,797 | 379 | 884 |
| Sablefish. | 597 | 947 | 104 | 187 |
| Sole..... | 5,688 | 6,069 | 359 | 409 |
| Other. | 1.120 | 1,247 | 51 | 54 |
| Pelagic and Estuarial. | 696,895 | 635,324 | 29,453 | 36,488 |
| Herring. | 872,202 | 505,287 | 6.477 | 6,167 |
| Salmon... | 119,324 | 124,198 | 22,790 | 30.244 |
| Chum. | 16,414 | 25,914 | 5,969 | S,06! |
| Cobo, | 25,071 | 28,688 | 6,658 | 9,865 |
| Pink. | 69,699 | 36.447 | 6,07\% | 4.069 |
| Sockeye | 11,885 | 20, 988 | 4,034 | 8,25\% |
| Spring. | 9,148 | 18,098 \%384 | 4,020 | 5, 546 |
| Other.. | 5,369 | 6,839 | 186 | 257 |
| Molluses and Crustaceans. | 21,124 | 18,613 | 1,429 | 1,587 |
| Clams, butter, little neck, razor, | 3,147 | 1,575 | 103 | 59 |
| Crabs....................... | 3,405 | 4,351 | 405 | 699 |
| Oyaters.............. | 12,768 | 11,509 | 635 | 588 |
| Shrimps and prawns Other. | 1,788 16 | 1,052 126 | 284 2 | 161 20 |
| Other. | ... | ... | 54 | 176 |
| Totals, Paelfic Coast. | .. | ** | 40,492 | 48,436 |

For footnotes, see end of table, p. 604.
2.-Quantity and Value of the Chief Commercial Fish Landed, 1963 and 1964-concluded

| Area and Speciea | Quantity Landed ${ }^{1}$ |  | Value Lendedt |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 1963x | 1964 | 1963 x | 1964 |
|  |  |  |  |  |
| Freshwater Fish | 116,241 | 53,834 | 12,636 | 12,101 |
| Bass,... | 1,997 | 1,849 | 277 | 285 |
|  | 1,512 | 1,243 | 239 | 202 |
| Herring, lake (cisco) | 2,375 | 1,993 | 77 | 83 |
| Perch.......... | 19,488 | 10,537 | 1,508 | 1,805 |
| Pike............. | 8,357 | 11,672 8,073 | 1,715 409 | 1,916 397 |
| Saugers. | 5, 406 | 4,442 | 1,172 | 917 |
| Sturgeon. | 394 | 438 | -234 | 228 |
| Trout... | 3,517 | 3,384 | 478 | 46. |
| Tullibee. | 8,160 | 13,778 | ${ }^{824}$ | 835 |
| Whitefash | 25,279 | 22,954 | 3,387 | 3,459 |
| Otber.. | 17,641 | 13,551 | 521 | 530 |
| Other, | 13,606 | 16,280 | 661 | \$14 |
| Totals, Inland............................ | 123,847 | 116,174 | 18,297 | 12,715 |
| Grand Totals, | $\cdots$ | $\cdots$ | 129,963 | 148, 60 \% |
| ${ }^{1}$ Excludes livers. ${ }^{2}$ Inclu <br> - Includes landings by Canadian fist | and liver porta. |  | cluded wid | 'Herring' |

3.-Persons Employed in the Primary Fishing Industry, by Province, 1962-64

| Province or Territory | Sea Fisheries |  |  | Inland Fisheries |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1962 | 1968 | 1964 | 1982 | 1963 | 1064 |
|  | No. | No. | No. | No. | No. | No. |
| Newfoundland. ${ }^{\text {Pre.in }}$ | 19,817 | 21,407 3,372 | 22,615 3,329 | - | 二 | 二 |
| Nova Scotia.......... | 12,711 | 13,467 | 13,333 | $\cdots$ | - | - |
| New Brunswick | 6,016 | 5,833 | 5,790 | 157 | 144 | 150 |
| Quebec....... | 3,786 | 3,674 | 3,512 | 1,031 | 658 | 781 |
| Ontario.. | - | - |  | 2,993 | 3,271 | 2,952 |
| Manitobs.... | - | - | - | 5, 814 | 5,837 | 5.642 8.010 |
| Saskatchewan. | - | - |  | 1,850 4,563 | 1,827 $\mathbf{5 , 1 1 7}$ | 4,211 |
| Alberta British Columbis. | 16,437 | 16,624 | 13,300 | 4,563 | 5,117 | 4,211 |
| Nortbweat Territories | $\cdots$ | 16,624 | 13,300 | 476 | 453 s | 438 |
| Totals. | 62,134 | 64,37\% | 61,879 | 16,684 | 17,308 r | 16,184 |

## Subsection 2.-Fish Products

According to commodity surveys conducted by the Dominion Bureau of Ststistics, the value of sea and inland fish products produced at all industrial levels, including the value to fishermen, amounted to $\$ 293,460,000$ in 1964 ; this was an increase of 12.7 p.c. over 1963 and the highest amount on record. Most of the increase over 1963 took place in the Atlantic Provinces.

## 4.-Value of All Products of the Fisheries, by Province, 1960-64

Nors.-Figures for the years 1917-59 are given in the corresponding table of previous Year Books beginning with the 1922-23 edition. Totals for five-year intervals from 1870 are givon in the 1956 edition, p. 597.

| Province or Territory | 1960 | 1961 | 1962 | 1963 r | 1964 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ 000 | \% 000 | \$'000 | \$ 000 | * 000 |
| Newfommdand. | 33,783 | $\xrightarrow[83,119]{ }$ | 38,883 8,403 | 43,797 | 46,591 |
| Nova Scotia. . . . . . | 51,753 | 54,689 | 67,380 | 77,721 | 90,531 |
| New Brunswick | 33,130 | 26,379x | 33,087 | 23,424 | 32,223 |
| Quebec. | 7,622 | 8,131 | 10,625 | 10,821 | 11,406 |
| Ontario. | 5,606 | 6,464 | 6,009 | B, 192 | 5,875 |
| Manitoba. | 7,035 | 6,214 | 7.979 | 7,563 | 6,885 |
| Saskatchewan | 2,830 | 3,186 | 3,115 | 2,711 | 3,082 |
| Alberta. | 2,021 | 1,701 | 1,234 | 1,125 | 1,122 |
| Britigh Columbia | 53,883 | 78.758 | 100,057 | 80,1141 | 97,9401 |
| Northwest Territories | 1,075 | 1,179 | 1,231 | 1,330 | 1,215 |
| Totals ${ }^{\text {2 }}$. | 138,005 | 222,879 | 200,986 | 200,311 | 293,460 |
| Soltwater products. | 178,750 | 203,568 | 240,694 | 240,719 | 274,496 |
| Freshwater products | 19,255 | 19,311 | 20,292 | 19,592 | 18,964 |

${ }^{1}$ Includes landings by Canadian fishermen in United States ports. $\quad$ Totals differ from the sum of provincial totals becauge duplications resulting from inter-sbipments between provinces are removed.
5.-Marketed Value of All Products of the Fisheries,' by Area and Species, 1963 and 1964

| Ares and Species | 1963 5 | 1964 |
| :---: | :---: | :---: |
|  | \$000 | \$ 000 |
| Atlantse Coast |  |  |
| Groundilsh | 91,494 | 96,731 |
| Cat ${ }^{\text {Cosh.... }}$ | ${ }_{48}^{8014}$ | \% 343 |
| Flounder and sole. | 48,914 10,359 | 46,784 |
| Haddock . . . . . | 10,3979 | 12,138 |
| Hake. | ${ }^{12} 823$ | 1,182 |
| Halibut. | 2,167 | 2.040 |
| Polloct. | 4+394 | 4,910 |
| Redifish. | 4,314 | 4,850 |
| Other. | 7,243 | 8,952 |
| Pelagit and Estuarial. | 25,236 | 26,259 |
| Alewives......... | 271 | 269 |
| Herring. | 6,566 | 7,090 |
| Mackerel | 1,674 | 1,771 |
| Sardines. | 9,852 | 7,424 |
| Smelts. | , 357 | ${ }^{409}$ |
| Swordfisb | 3,733 | 4,650 |
| Other., | 1. 101 | 1,081 |
| Molluses and Crustaceams. | 38,378 | 47,209 |
| Clams- |  |  |
| Quahauga. | 34 | 59 |
| Soft-shelled | 272 | 273 |
| Oobsters. | 26.253 | 32,223 |
| Oybters. | 6683 10.777 | 12.702 |
| Other. | 359 | 1,323 |
| Other. | 4,497 | *,31\% |
| Totals, Atlantic Const. | 160,605 | 176,656 |

[^193]
## 5.--Marketed Value of All Products of the Fisheries, ${ }^{1}$ by Area and Species, 1963 and 1961concluded

| Area and Species | 1963 - | 1964 |
| :---: | :---: | :---: |
|  | \$'000 | \$ 000 |
| Pacifte Coast |  |  |
| Grounditsh | 12,479 | 12,873 |
| Cod...... | 705 | 1,160 |
| Hinalibut ${ }^{\text {a }}$. | 10,541 | 10,104 |
| Sablefish. | 517 163 | 569 278 |
| Sole... | 643 | 602 |
| Other.. | 110 | 105 |
| Pelagie and Estuarial. | 62, \%80 | 78,594 |
| Herring. | 11,697 | 11,561 |
| Salmon.. | 48, 898 | 63, 044 |
| Coho. | 14.866 | 7,198 16,976 |
| Pink. | 18,550 | 12,563 |
| Sockeye. | 8,499 | 18,281 |
| Spring. | 5,455 | 7,602 |
| Other. | d 671 | 1,096 |
| Other. | 1.785 | 4,379 |
| Molluses and Crustaceans. . . . . . . | 2,789 |  |
| Clamb, butter, little neck, razor, etc. | 340 | 190 |
| Crabs.... | 1,000 | 1,440 |
| Sbrimps and prawns. | 573 | 313 |
| Other............... | 35 | 51 |
| Other. | 2,326 | 3,44\% |
| Totak, Pactific Censt.. | 80,114 | 97,940 |
| Intand |  |  |
| Freshwater Fish | 18,878 | 18,292 |
| Bass. | 811 | 358 |
| Catfish. | 260 | 218 |
| Herring, lake (cisco) | ${ }^{82}$ | $\begin{array}{r}71 \\ \\ \hline 070\end{array}$ |
| Perch......... | 1,728 | 2,070 4,352 |
| Pickered (yellow) | 5,283 1,098 1, | 4,052 1,042 |
| Saugers. | 1,790 | 1,624 |
| Sturgeon. | 260 | ${ }^{242}$ |
| Trout.... | 8887 | 850 |
| Tullibee. | 769 $\mathbf{5 , 5 8 0}$ | 1,071 5,645 |
| Other.... | , 830 | ${ }^{749}$ |
| Other. | 714 | 872 |
| Totals, Inland. | 19,582 | 18,964 |
| Grand 'Totals. | 200,311 | 209,460 |

I Includes value of livers and liver producta.
2 Includes landings by Canadian fisbermen in United States porta.

The annual output of canned salmon fluctuates considerably with the extent of the catch, as is shown in Table 6. This product has long been the most important of the industry, but the demand for Atlantic Coast frozen groundfish fillets and blocks has been rising so rapidly that the value of these products now runs a close second. In fact, in 1960 and 1963, years of low canned salmon production, the value of the Atlantic products was in first place.
6.-Pacific Coast Production of Canned Salmon, 1962-64

| Species | 1882 |  | 1963 |  | 1964 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quantity | Value | Quantity | Value | Quantity | Value |
|  | cases ${ }^{\text {l }}$ | \$'000 | cases ${ }^{\text {l }}$ | \$'000 | cases ${ }^{1}$ | \$ 000 |
| Chum. | 134,488 | 3.025 | 119.190 | 2,547 | 232.722 | 5,010 |
| Coho. | 387,735 | 6, 886 | 157,481 | 5,478 | 204,782 | 8,179 |
| Pink... | 1,188, 662 | 30,337 | 757,453 | 17.863 | 464, 107 | 12,142 |
| Sockeye.. | 207,717 | 15,344 | 158.375 | 8,325 | 343,358 | 18,088 |
| 8pring.... | 7,175 $\mathbf{8 1 4}$ | 186 23 | 10,000 | 230 21 | 9,127 1,262 | 224 34 |
| Totals. | 1,816,386 | 55,801 | 1,208,271 | 34,464 | 1,255,308 | 48,67\% |

148 lb .
7.-Atlantle Coast Production of Frozen Fillets and Fish Blocks, 196\%-64

| Area and Speciea | 1962 |  | 1963 |  | 1964 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quautity | Value | Quantity | Value | Quantity | Value |
|  | '000 lb. | 8000 | '000 lb. | \$'000 | '000 lb. | \$000 |
| Newfoundland, | 72,179 | 16,780 | 77,827 | 18,904 | 82,020 | 13,498 |
| Cod. | 41,801 | 9, 136 | 47,359 | 11,051 | 50,141 | 10,799 |
| Haddock | 11,499 | 2,769 | 4.225 | 1,230 | 3,217 | 907 |
| Redfish. | 9,851 | ${ }_{2}^{2} 342$ | 13,093 | 2,920 | 11,223 | 2.559 |
| Flatish | 8,105 | 2,326 | 12,016 | 3,444 | 16,334 | 4,965 |
| Other | 923 | 207 | 1,134 | 255 | 1,105 | 268 |
| Maritimes. | 77, 778 | 13,550 | 81,345 | 19,921 | 93,867 | 24,458 |
| Cod. | 32,457 | 7,253 | 80,202 | 6,630 | 30,663 | 7,250 |
| Haddocl | 16,743 | 5,088 | 17.542 | 5,242 | 25,541 | 8,055 |
| Redish | 4,260 | 1.397 | 6,172 | 1,536 | 4,418 | 1,086 |
| Flatish | 12,414 | 3,828 | 26.183 | 6,343 | 33,060 | 8,236 |
| Other. | 12,104 | 1,984 | 1,246 | 170 | 185 | 31 |
| Quebec | 15,659 | 3,084 | 16,442 | 3,484 | 16,791 | 3,459 |
| Cod. | 12,238 | 2,360 | 12,010 | 2,417 | 10,121 | 2,043 |
| Other. | 3,421 | 720 | 4,432 | 1,067 | 6,670 | 1,416 |
| Totals, Atlantle Coast. | 165,816 | 39,410 | 175,614 | 42,305 | 192,678 | 47,615 |
| Cod. | 86,495 | 18,749 | 89,571 | 20,098 | 90,925 | 20,092 |
| Haddook | 28,358 | 7,883 | 21,767 | 6,472 | 28,758 | 8,962 |
| Redfish | 16,079 | 4.106 | 19,265 | 4,456 | 15,641 | 3,645 |
| Flatish | 21,725 | 6.461 | 38,199 | 9,787 | 49,394 | 13,201 |
| Other. | 13,158 | 2,211 | 6,812 | 1,492 | 7,960 | 1,715 |

## Section 4.-Governments and the Fisheries

Under the British North America Act, the Federal Government has full legislative jurisdiction for the coastal and inland fisheries of Canada. The Federal Parliament therefore enacts all laws for the protection, conservation and development of the fisheries and responsibility for the administration and enforcement of these laws is vested in the federal Department of Fisheries. In some provinces, however, this administration has been delegated, by arrangement, to provincial agencies.

Specifically, the federal Department of Fisheries administers all tidal or sea fisheries except those of the Province of Quebec, and also the freshwater or non-tidal fisheries of the four Atlantic Provinces, the Yukon Territory and the Northwest Territories. The Provinces of Ontario, Manitoba, Alberta and Saskatchewan administer their own freshwater fisheries and in British Columbia the provincial government controls freshwater species but the Federal Government is responsible for marine and anadromous species. Administration of the fisheries of National Park areas throughout Canada is the responsibility of the Canadian Wildlife Service, Department of Indian Affairs and Northern Development.

Federal-Provincial Relations.-The mutual interest of federal and provincial governments in fisheries problems is recognized in the undertaking of joint studies and programs, frequently on a regional basis. Regional committees established in recent years have brought together representatives of all governments concerned for periodic discussion. Four groups have evolved: the Federal-Provincial Atlantic Fisheries Committee consisting of representatives of the Federal Government and of the Governments of New Brunswick, Newfoundland, Nova Scotia, Prince Edward Ialand and Quebec; the Federal-Provincial Committee for Ontario Fisheries; the Federal-Provincial Prairie Fisheries Committee comprising representatives of the Federal Government and of the Governments of Alberta, Manitoba and Saskatchewan; and the Federal-Provincial British Columbia Fisheries Committee.

Members of the Committees are the Deputy Minister of Fisheries of Canada and the Deputy Ministers of provincial departments responsible for fisheries. Sub-committees make recommendations for industrial development, research and marketing problems. The main committee in each case co-ordinates, where practicable, all activities in the respective fields of responsibility of its members and suggests to the respective governments means of carrying out fisheries programs and projects of common concern. These include the development of methods and techniques in the catching of fish and of shore and plant facilities, and studies of the economics of fisheries to ensure that any proposed program of development is soundly based.

Co-operation between the federal Department of Fisheries and the provinces has taken the form of cost-sharing arrangements on joint projects. Legislation enacted in 1966 grants to the federal Department of Fisheries further powers to enter into such agreements for purposes of modernizing, mechanizing and diversifying the nation's fisheries. The Fisheries Development Act (SC 1966, c. 18), approved by the House of Commons on Apr. 25, 1966 and given Royal Assent on May 12, 1966, served to streamline the operations of the Department by incorporating several of the development activities undertaken under earlier legislation. It empowers the Minister of Fisheries to undertake projects "( $a$ ) for the more efficient exploitation of fishery resources and for the exploration for and development of new fishery resources and new fisheries; (b) for the introduction and demonstration to fishermen of new types of fishing vessels and fishing equipment and of new fishing techniques; and (c) for the development of new fishery products and for the improvement of the handling, processing and distribution of fishery products." The Act authorizes the Minister to enter into cost-sharing agreements with provinces, with private companies and with individuals or co-operatives. Financial assistance may be given for the construction and equipment, or modification, of commercial cold storages and mechanically refrigerated bait-freezing facilities to be used for the preservation of fishery products, and for the construction and equipment of fishing vessels. The Act also authorizes the conduct of economic studies in conjunction with universities or other educational institutions and provides for the establishment of advisory committees to assist in the implementation of fisheries development programs.

## Subsection 1.-The Federal Government

The work of the Federal Government in the conservation, development and general regulation of the nation's coastal and freshwater fisheries is performed by three agencies under the Minister of Fisheries:-
(1) The federal Department of Fisheries with headquarters at Ottawa, Ont., and regional offices under Regional Directors at Vancouver, B.C., Winnipeg, Man., Quebec, Que., Halifar, N.S., and St. John's, Nfld.
(2) The Fisheries Research Board of Canada with headquarters at Ottawa and biological, technological and oceanographic stations across Canada.
(3) The Fisheries Prices Support Board with headquarters at Ottawa.

A brief outline of the functions of each of these agencies is given in this Subsection.
The Department of Fisheries.-Canada's federal fisheries service began with Confederation in 1867 but it functioned as a branch of other departments until 1930, when legislation was enacted to establish a separate Department of Fisheries. The chief responsibilities of the Department are, in brief: to conserve and develop Canada's primary fishery resources; to encourage the development of the fishing industry in the national economy; to inspect fish products, establish standards of quality and promote the maximum utilization of the fishery resources; and to develop a proper public understanding of the resources and the industry. Services rendered by the Department have been revised and broadened with the times; increased attention has been paid in recent years to the development aspects of the fisheries. About 2,000 persons are employed by the Department, most of them in conservation, inspection, protection and administration duties in fishing areas across the country. The Ottawa headquarters staff numbers about 200.

A Departmental reorganization, initiated in 1965, brought about certain structural changes, including the division of the former Conservation and Development Service into two separate Services-the Conservation and Protection Service, concerned mainly with administration of programs for protection of fish stocks and enforcement of regulations under the Fisheries Act and other legislation, and the Resource Development Service, responsible for developing programs to preserve and extend fish stocks through the application of scientific and technical knowledge. The importance of Canada's participation in international commissions and agreements respecting fisheries was reflected in the designation of an Assistant Deputy Minister to assume responsibility for international and jurisdictional affairs, and the creation of an International Fisheries Service. Another Assistant Deputy Minister is responsible for all services engaged in the day-to-day activities of the Department.

The Industrial Development Service, established in 1955, carries out a wide range of development programs to aid fishermen and the fishing industry. Projects undertaken either on its own or jointly with provincial agencies are designed to test and demonstrate technological innovations for improvement of catching, processing or distribution of fish and of fishery products. The Economics Service has two Branches-the Economics Intelligence and Research Branch provides the Government and the commercial fishing industry with current information under the general heading of trade intelligence, and the Planning and Policy Analysis Branch carries out studies and investigations in the primary fisheries and in the processing and distribution of fish products. The Inspection Service is responsible for the inspection of fish and fish products to ensure the maintenance of quality standards and controls. Field officers are regularly stationed at major fish-processing centres and 17 permanent or mobile fish inspection laboratories are operated in Atlantic, inland and Pacific fishing areas. A Special Programs Service, established in 1965, administers programs for economic aid to fishermen and the fishing industry, including the Fishermen's Indemnity Plan, the Newfoundland Bait Service and the Salt Assistance Plan. Periodic requests are received for assistance to compensate for storm damage to fishing gear and in 1965 special assistance was provided to inshore fishermen affected by poor returns.

The Information and Consumer Service is responsible for informing the fishing industry, fishermen and the general public on activities of the Department through the distribution across the country of printed material, films and filmstrips, and radio and television material. The Consumer Branch of the Service operates test kitchens in major population centres and carries out demonstrations, lectures and publicity programs to promote the consumption of fishery products.

International Fisheries Conservation.-Cognizant of the problems of conservation in fisheries exploited on the high seas, Canada has long been a leading proponent of and participant in international conferences, conventions and treaties with other countries involved in fisheries. The federal Department of Fisheries assumes a major responsibility for the negotiation, revision and implementation of international fisheries treaties on behalf of the Government of Canada. Canada is now a party to seven international fisheries conventions:-
(1) the Convention between Canada and the United States ior the preservation of the halibut fishery of the northern Pacific Ocean and Bering Sea;
(2) the Convention between Canada and the United States for the protection, preservation and extension of the sockeye and pink salmon fisheries in the Fraser River system;
(3) the International Convention for the High Seas Fisheries of the North Pacific Ocean between Canada, Japan and the United States;
(4) the Interim Convention on Conservation of North Pacific Fur Seals between Canada, Japan, the Soviet Union and the United States;
(5) the International Convention for the Northwest Atlantic Fisheries;
(6) the Convention on Great Lakes Fisheries between Canada and the United States; and
(7) the International Convention for the Regulation of Whaling.

The federal Department of Fisheries is represented on each of these Commissions by one of its senior officers.

The first international agreement contracted by Canada as an independent nation was a treaty negotiated with the United States in 1923 for the protection of halibut stocks of the Pacific Ocean. An international commission established under that treaty was given broader regulatory powers in subsequent conventions, most recently in 1953 when its name was changed to the International Pacific Halibut Commission.

The International Pacific Salmon Fisheries Commission has achieved much success toward rehabilitation of depleted salmon stocks in the Fraser River of British Columbia. Discussions were held in 1965 and 1966 between representatives of Canada and the United States to consider revision of the 1956 protocol which brought pink salmon of the convention area within the scope of the Commission's activities. Negotiations also took place during the same period in an endeavour to reach agreement on problems arising from the intermingling of salmon bound for rivers of northern British Columbia and southeastern Alaska.

Protection of the high seas fisheries of the North Pacific Ocean is the objective of the International North Pacific Fisheries Commission established under a convention ratified in 1953 by Canada, Japan and the United States. The Commission conducts co-ordinated scientific research programs and recommends conservation measures to be undertaken by the contracting parties.

Fur seal stocks of the North Pacific and its adjacent seas are protected by the Interim Convention on Conservation of North Pacific Fur Seals which was ratified in 1957 by Canada, Japan, the Soviet Union and the United States, and amended by a protocol in 1964. This convention was preceded by an international treaty signed in 1911 which prohibited the killing of fur seals at sea-a measure which, aided by careful management programs, made possible the restoration of depleted seal herds. At the present time, under the terms of the convention, Canada and Japan each receives annually 15 p.c. of the seal skins taken on the United States-controlled Pribilof Islands, and 1,500 skins from the harvest of the Commander and Robben Islands which are under control of the Soviet Union.

The International Commission for the Northwest Atlantic Fisheries conducts studies and makes recommendations for measures to conserve and develop the fish stocks off Canada's East Coast. The convention under which the Commission was established was signed in 1949 and has since been ratified by 13 nations: Britain, Canada, Denmark, the Federal Republic of Germany, France, Iceland, Italy, Norway, Poland, Portugal, Spain, the Soviet Union and the United States.

A Canadian proposal to bring the conservation of harp and hood seals of the Northwest Atlantic under the ICNAF Convention received endorsation by the last of the 13 member nations in April 1966, thus making it possible to initiate an international conservation program.

A draft international convention for the conservation of tuna and tuna-like fishes of the Atlantic Ocean was discussed at a 17-nation conference in Rio de Janeiro, Brazil, in May 1966. Canada was represented at the conference which considered proposals for establishment of an international commission to study tuna stocks and to recommend maximum catch levels for the various species.

Canada is a member of the International Whaling Commission and is obligated to submit statistical data on whales caught by Canadian vessels and to conduct scientific studies on whale stocks of special interest to Canada.

Another international fisheries agreement to which Canada is a signatory is the Great Lakes Fisheries Convention, which provides for joint action by Canada and the United States in Great Lakes fishery research and in a program for the control of the predatory lamprey in these waters. This convention came into force in 1955.

While co-operating with other nations to conserve high seas fisheries resources through international agreement, Canada acted in 1964 to protect inshore fisheries by establishing a 12 -mile exclusive fishing zone on all coasts. The Territorial Sea and Fishing Zones Act prociaimed in that year has since been enforced against all countries except those having traditional fishing rights. Negotiations have been conducted with these latter countries with regard to the application of the fishing zone and to the location of the baselines from which the fishing zone is measured.

The Fisheries Research Board of Canada.-The Fisheries Research Board is a research organization established by Act of Parliament (RSC 1952, c. 121) for the purpose of conducting basic and applied research on Canada's living aquatic resources, their environment and their utilization. Its antecedents go back to 1898 and it is thus the lineal descendant of one of the oldest scientific organizations in Canada and one of the oldest government-supported research organizations under the supervision of an independent scientific board in North America.

By its Act, the Board is placed under the control of the Minister of Fisheries. The Board proper consists of a permanent chairman, who is appointed by the Governor in Council and who is a member of the Public Service of Canada, and "not more than eighteen other members" holding honorary appointments from the Minister of Fisheries for five-year terms; the Act requires that "a majority of the members of the Board, not including the chairman, shall be scientists, and the remaining members of the Board shall be representative of the Department lof Fisheries) and the fishing industry" The scientific members are drawn principally from universities and research foundations across Canada, to include specialists in disciplines related to the Board's work. The industry members are selected from among Canada's leading business men with an intimate knowledge of fishing and the fishing industry and the Department of Fisheries representative is usually a senior staff member in Ottawa. Board members have both advisory and executive functions. The advisory functions are delegated in the first instance to regional Advisory Committees who conduct on-the-spot regional reviews and report to the Board on the operations and scientific programs with a view to their improvement. The executive functions are delegated to an Executive Committee elected from Board members and approved by the Minister.

The operations of the Board are highly decentralized, there being only a small administrative, supervisory and publications staff in Ottawa. The responsibilities of the Ottawa office include administration of a grant program to encourage university research in the fields of marine and aquatic science. The Board employs approximately 900 persons, of whom about 250 are scientists.

Biology. - The biological program of the Board is designed to add to fundamental knowledge concerning Canada's vast living marine and freshwater resources. Included here are life history, population and behaviour atudies leading to a sound scientific basis for the conservation and management of the commercially important fisheries including those for lobsters, crabs, shrimps, oysters, scallops, clams, marine mammals and other wellknown economically important aquatic species of animals, such as salmon, cod, herring and halibut, as well as some marine plants, such as phytoplankton and seaweeds. Also included are studies in fish and shellifish diseases, fish enemies including the ill effects of water pollution, and such basic studies as fish genetics, physiology and behaviour, the latter with a view to improving fish cultural and farming methods and also to improving fish farm and hatchery stocks. Besides these basic studies, new fishing grounds and new species for exploitation are sought and experiments in improving fishing methods are undertaken.

The biological work on the Atlantic Coast is conducted out of research atations located in St. Andrews, N.B., and St. John's, Nfld.; work on arctic fisheries and on sea mammals is directed from a laboratory situated in Ste. Anne de Bellevue, Que.; freshwater work is carried out from a station in Winnipeg, Man.; and work on the Pacific Coast is directed from research laboratories situated in Nanaimo, B.C. The Board operates 18 research vessels for its biological studies, varying from small inshore and lake craft to specially built seagoing ships. The Board acts as Canada's research agent for three international fisheries commissions and two international sea-mammal commissions to which Canada is party.

Oceanography.-Oceanography includes the study of the marine (and freshwater) environment in which aquatic organisms live. This is under continuing study to further knowledge in primary and secondary productivity and the occurrence of ocean and freshWater life of importance to man. Encompassed here also are investigations into the distribution and physical and chemical characteristics of major ocean currents and the physical and biological structure of large ocean areas including the ocean bottom where concentrations of fish and other aquatic life occur. Ocean climate and ocean weather as they affect the distribution of fish and other living organisms as well as the vertical and horizontal distribution of nutrient matter and the cycle of energy and life in the seas are regularly observed and correlated. These studies, as well as special studies of interest to the Royal Canadian Navy, the Department of Transport and the international fishery commissions, are carried out by the Board's two oceanographic groups operating from Dartmouth, N.S., and Nanaimo, B.C., with strong ship support from the Navy and the Department of Transport, and co-operation from the Department of Energy, Mines and Resources.

Technology.-Investigations are conducted toward improving methods of preserving, processing, storing and distributing fish products, as well as of utilizing all parts of the fish. These include developments in refrigeration and the use of antibioties as fish preservatives, of improved refrigerated rail cars for fish distribution, improvements in canning, smoking and salting of fish as well as the development of new products such as protein concentrates (fish flour) and new uses such as the development of wieners for the utilization of abundant species that are not now used for food. Fundamental studies of the structure and composition of fish proteins, fish oils, fish hormones, the energy expenditure of migrating salmon and the nutrition of marine bacteria are under way.

Technological investigations on the Atlantic Coast are carried out at research laboratories situated in Halifax, N.S., and Grande Rivière, Que., and applied work for New-
foundland is carried out at a Technological Unit in St. John's. For inland areas technological work is centred at Winnipeg, Man., and a research laboratory in Vancouver, B.C., undertakes investigation of Pacific Coast problems.

The Fisheries Prices Support Board.-The Fisheries Prices Support Board, established in 1947, is responsible for investigating and, where appropriate, recommending government action to support prices of fishery products where declines are experienced. The basic principle of the legislation is to protect fishermen against sharp declines in prices and consequent loss of income. The Board is responsible to the Minister of Fisheries and consists of a chairman, who is a senior officer of the Department of Fisheries, and five members chosen from the fishing industry in the various fishing regions of Canada.

The Board has authority to buy quality fishery products under prescribed conditions and to dispose of them by sale or otherwise, or to pay to producers the difference between a price prescribed by the Board and the average price the product actually commands. The Board has no power to control prices other than its purchase policy nor has it any jurisdiction over operations in the fishing industry or the fish trade. Money necessary for dealings in fishery products is available to the Board from the Consolidated Revenue Fund to a maximum amount of $\$ 25,000,000$ annually on recommendation of the federal Treasury Board and authorization of the Governor in Council.

In 1965, because of market disruption resulting from political disturbances in the Dominican Republic, the Board purchased up to $\$ 300,000$ worth of salted hake, pollock and cusk from exporters in Nova Scotia, New Brunswick and Prince Edward Island, up to $\$ 190,000$ worth of salted cod from Newfoundland and up to $\$ 10,000$ worth of salted cod from Quebec. The salted hake, pollock and cusk was donated to the Dominican Republic and part of the salted cod went to Kenya and Guyana under the World Food Program; the remainder of the cod was disposed of because of deterioration.

The Board co-operates with the Economics Service of the Department of Fisheries in the collection and analysis of costs of fishing operations and, in co-operation with the Department of Trade and Commerce, maintains a continuous review of the markets for various fishery products. A small staff is maintained for administrative activities at headquarters of the Board in Ottawa.

## Subsection 2.-The Provincial Governments*

An outline of the work undertaken by each of the provincial governments in connection with administration of commercial and game fisheries is given in the following paragraphs.

Newfoundland.-The provincial Department of Fisheries in conjunction with the Newfoundland Fisheries Development Authority, a Crown corporation established in 1953, is concerned mainly with the improvement and development of fishing and production methods. It conducts experiments and demonstrations in longlining, Danish seining and otter trawling, in the construction of multi-purpose fishing craft, and in the exploration of potential fishing grounds.

Loans are made to processors for the establishment and expansion of fish processing plants and for deepsea draggers and also to fishermen for the construction and purchase of modern vessels capable of a greater variety of fishing operations and larger production. Fishermen receive further aid through bounty payments at the rate of $\$ 160$ a ton for newly constructed vessels under the Fishing Ships (Bounties) Act, 1955. The Fishing and Coasting Vessels Rebuilding and Repairs (Bounties) Act, 1958 authorizes the government to assist financially in maintaining and prolonging the life of the existing fleet. The Coasting Vessels (Bounties) Act, 1959 authorizes the granting, for locally built ships, of a maximum bounty of $\$ 300$ a ton for vessels measuring from 15 to less than 100 gross tons,

[^194]and $\$ 150$ a ton for vessels of between 100 and 400 gross tons. An Inshore Fisheries Assistance Programme provides a maximum bounty of $\$ 10$ a foot on boats measuring from 24 to 35 feet and bounties are paid to fishermen on certain types of nylon and other synthetic fibre fishing nets and lines.

Other services include: advisory services to fishermen on gear and equipment, industrial research, plant construction, plant engineering and economics; assistance to fishermen's unions; weather and ice reports; and search and rescue. The Fisheries Salt Act, 1957 provides for rigid control over the use of fisheries salt.

Sport Fisheries.-The inland waters of Newfoundland, although they provide excellent sport fishing, are not commercially exploited. The lakes and ponds actually remain under the authority of the Natural Resources Branch of the provincial Department of Mines, Agriculture and Resources but, under federal-provincial agreement, these waters, including rivers and streams, are under federal control in matters of conservation and guardianship.

Prince Edward Island.-The sea and inland fisheries of Prince Edward Island are administered by the Federal Government. The provincial Department of Fisheries supplements federal activity and is concerned mainly with development of the fisheries industry. The Department provides technical assistance and, in conjunction with the Fisheries Research Board of Canada and branches of the federal Department of Fisheries, engages in some experimental work.

Financial assistance is made available to fishermen through the Fishermen's Loan Board of Prince Edward Island, a body corporate operating under the provincial Department. The Fishermen's Loan Board operates under authority given by the Re-establishment Assistance Act and regulations thereunder, approved by the Lieutenant-Governor in Council, Jan. 7, 1949, with amendments. Loans are made to fishermen and companies for the purchase of boats, engines and other deck machinery at an interest rate of 4 p.c. Loans for the construction or expansion of processing plants are available through the Industrial Establishments Promotion Act, the Prince Edward Island Industrial Corporation or the Industrial Enterprises Limited, under which loans may be made for facilities handling Gishery products.

Sport Fisheries.-Game fisheries are the responsibility of the Department of Fisheries. The streams of the province, mostly spring-fed and fairly constant in flow, provide very favourable conditions for the reproduction of game fish, of which speckled trout is the most important variety. Investigations concerning the production of trout of a size attractive to anglers are being conducted by the Fisheries Research Board of Canada at sites provided by the provincial Department. Unfortunately, many of the formerly fertile and highly productive ponds of the province have disappeared, and the provincial Department is actively concerned with damming and restoring these for the enjoyment of the public.

Nova Scotia.-Although the Federal Government has exclusive jurisdiction over the marine and inland fisheries of Nova Scotia and attends to all phases of administration related thereto, the Nova Scotia Government operates in several fields where provincial initiative is found to be necessary and appropriate, having regard for the importance of the fishery resources in terms of employment, industry, trade and recreation.

In the commercial fisheries, provincial government interests are the concern of the Nova Scotia Department of Fisheries. The Fishermen's Loan Board is administered by that Department and the Industrial Loan Board by the Nova Scotia Department of Trade and Industry; the first makes loans to fishermen for the purchase of boats and engines and the second makes loans for the construction or improvement of fish processing plants. Fisheries engineers perform inspection and survey duties for the Loan Boards and provide technical assistance and advice to loan applicants and others in the fisheries
and allied industries, notably the boatbuilding industry. Instructors conduct courses for fishermen in the care and maintenance of marine engines, in basic navigation and in the design, construction and maintenance of gear. This program receives substantial assistance from the Technical and Vocational Training Branch of the federal Department of Manpower and Immigration. The on-course instruction is supplemented frequently by informal on-the-spot assistance to smaller groups who find themselves in need of technical help with particular problems. The Nova Scotia Department of Fisheries, with the financial and/or technical assistance of the federal Department of Fisheries, organizes and conducts explorations of fishing grounds for new resources and the adaptability of new, improved gear and methods.

Sport Fisheries.-In recent years, Nova Scotia, through the Wildlife Division of its Department of Lands and Forests, has spent a considerable amount of money on management and research in certain lakes and streams in the province with a view to aiding the Atlantic salmon and trout fishery. A continuing program of lake and stream investigations was begun in 1961 in order to obtain information useful in the formulation of a fish management program for the future. A system of rearing ponds, capable of producing 200,000 yearling speckled trout annually, has been established on the Medway River in Queens County and the Moser River in Halifax County. Several projects dealing with reclamation, farm ponds, rainbow trout and smallmouth bass are also being conducted. Full-time fisheries biologists are employed by the Division.

New Brunswick.-Commercial fishing is one of the most important basic industries of New Brunswick, employing about 5,800 fishermen with annual earnings of $\$ 11,000,000$, and 2,500 plant workers. The annual marketed value of fish products is about $\$ 35,000,000$, of which 90 p.c. is exported to the United States. New Brunswick's commercial fisheries, both tidal and inland, are under the legislative jurisdiction of the federal Department of Fisheries; angling in Crown waters is the responsibility of the provincial Department of Natural Resources.

The New Brunswick Department of Fisheries, established in 1963, has three Branches -General Administration, Boatbuilding and Maintenance, and Exploratory Fishing and Education; the Fishermen's Loan Board of New Brunswick, created in 1946, is under the jurisdiction of the Minister of Fisheries.

The General Administration Branch is responsible for personnel, accounting, field staff and administration of the New Brunswick Fish Inspection Act and Regulations; it operates three regional offices covering the three main fishing areas of the province.

The functions of the Boatbuilding and Maintenance Branch, which is staffed with marine engineers, boat inspectors and a naval architect, include the study, modification and approval of plans and specifications of fishing vessels to be financed by the Fishermen's Loan Board; the inspection of the 100 to 125 vessels of various types and sizes being built every year in the province's 15 shipyards; and the training of fishermen in the proper methods of maintaining hulls and machinery. Continuous efforts are made by the Branch to improve construction standards of inshore fishing vessels. Boats of sturdier construction and equipped with more powerful propulsion engines are enabling inshore fishermen to diversify their operations from the traditional lobster fishery. New designs are being introduced in the fleet of 128 large offshore and 3,200 small inshore fishing vessels which make up the present fishing fleet, the trend being toward larger and more automated vessels. Combination types capable of dragging for groundfish and purse seining for pelagic species are becoming more popular among the younger welltrained fishermen. The 92 -foot class built in 1963 in a New Brunswick shipyard has been very successful at stern dragging for haddock and purse seining for herring, sardines and tuna. A West Coast-designed 79 -foot combination trawler-seiner of hard chine construction has been added recently and a 100 -foot unit of similar design is under construction. Three additional 65 -foot units of wooden construction were commissioned in

1966 for fishermen of Campobello Island and northern New Brunswick. The 87 -foot wooden side trawler, ten of which are in operation, has also proved very successful, particularly in the Gulf of St. Lawrence area.

The Exploratory Fishing and Education Branch continues the experimental and exploratory fishing and fish processing projects that have been carried on for many years in co-operation with the federal Department of Fisheries. Results of this extensive experimental work and research studies include the establishment of crab fisheries on the east and north coasts of the province; the establishment of a tuna fishery in the Bay of Fundy, on the shores of which a $\$ 1,500,000$ canning plant is under construction; and the introduction of Scottish and Danish seining techniques. In the search for unexploited species of fish and shellfish, in addition to cancer crabs and tunas, commercial quantities of spider crabs and shrimps were located in the deep waters of the Gulf of St. Lawrence. During 1966-67, eleven fisheries development projects were undertaken on a shared-cost basis with the federal Department of Fisheries. Among those showing the most promising results was the offshore exploration of herring in the Gulf of St. Lawrence; a West Coast seiner, chartered by the New Brunswick Department of Fisheries, caught as many as 153 tons of large fat herring in one set at the entrance to the Bay of Chaleur. The Branch operates a modern school of fisheries at Caraquet where, in 1966-67, 110 fishermen took training in the various phases of their trade. The regular program of the school includes navigation, rules of the road, motor mechanics, electronic devices, fishing gear technology, business administration, marine biology, oceanography (restricted), radio-telephone, metal and wood working, arithmetic and languages (upgrading) and other related subjects. Arrangements are being made to extend the regular course from five to nine months of the year and to conduct extension courses.

The Fishermen's Loan Board of New Brunswick is a body corporate operating under the jurisdiction of the Minister of Fisheries. Since its inception in 1946 it has granted over 1,400 loans to New Brunswick fishermen for a total of $\$ 15,000,000$; total outstanding loans stood at $\$ 6,300,000$ in 1966. Loans are repayable within five years on small inshore boats but repayment schedules on large trawlers may extend to 15 years, based on the gross proceeds of the catch. Most of the new fishing vessels being built in the province are financed by the Board, which also acts as agent for the financial assistance program granted by the federal Department of Fisheries to owners of new fishing vessels.

Sport Fisheries.-Sport fishing contributes substantially to the economy of the province, mainly through the tourist trade. Great Atlantic salmon rivers like the Miramichi, the Restigouche and the St. John are known around the world for their prolific production of this majestic game fish and attract many thousands of tourists to the province each year. Anglers catch as many as 50,000 salmon a year in the Miramichi system alone. Many other species are also sought after by both residents and non-residents in the hundreds of streams, rivers and lakes of the province.

Quebec.-The Quebec Department of Industry and Commerce administers the commercial fisheries of the province. For the benefit of producers and fishermen, it operates a network of 61 cold storage plants for the freezing and preservation of fish and the supplying of frozen bait and ice; the plants have a total daily freezing capacity of 500 tons and a storage capacity of $25,000,000 \mathrm{lb}$. The Department also owns and maintains about 110 stations in small fishing ports where fish is kept under proper conditions while awaiting collection by truck or boat, and an artificial drying plant with a processing capacity of $3,000,000 \mathrm{lb}$. of fish annually. A staff of fish wardens, technicians and technologists administers fishery legislation and assists in the application of new techniques for the expansion of the industry. The central administration is located in Quebec City with offices at the principal fishing centres. Fish inspection is carried out by federal inspectors who are given additional powers by the provincial government with respect to local sales.

Educational work among the fishermen and producers is conducted by the Department to teach the latest methods of fish preparation and of producing high-quality producta. A Fisheries Training School, operated by the Department of Education at Grande Rivière, gives free theoretical and practical courses in fishery to fishermen of all ages. The Co-operative Associations of Fishermen receives encouragement through the Social Economic Service of Ste. Anne de la Pocatière subsidized by the Federal Government. Under a maritime credit system, fishermen may obtain loans from credit unions for the purchase of boats and gear. Fish consumption is promoted through advertising campaigns in newspapers and magazines, exhibits at fairs, cooking demonstrations, educational films and the free distribution of fish recipes and publicity leaflets.

The Department adheres to the federal-provincial agreement on the building of draggers and longliners and assumes the building costs on a capital refunding plan. As at Mar. 31, 1965, the fishing fleet consisted of two 129-foot steel draggers, 1282 -foot steel draggers, 84 wooden draggers, 49 longliners and one boat equipped for clam dragging. The cost of construction of fishing boats since 1952 has been about $\$ 13,000,000$ and loans to fishermen have exceeded $\$ 8,000,000$.

Biological and hydrographical research is conducted in the Gulf of St. Lawrence, directed by the Marine Biological Station at Grande Rivière, and studies of the biology of freshwater fish of the St. Lawrence River and its tributaries are undertaken at a laboratory located in Quebec City. An aquarium in Quebec City exhibits freshwater and saltwater fish in 60 large tanks.

Sport Fisheries.-The Department of Tourism, Fish and Game has jurisdiction over sport fishing in inland waters; it employs 250 full-time wardens. Licences are required for sport fishing and hunting. Four hatcheries are maintained at strategic points throughout the province for the distribution in public waters of speckled trout, brown trout, rainbow trout and grey trout, splake, ouananiche, maskinonge and salmon.

Excellent fishing may be found in all provincial parks and reserves, except Mont Orford Park. Gaspesian and Laurentide Parks are renowned for their trout fishing. Chibougamau Reserve and La Vérendrye Park, situated on the height of land, are eminently suited to canoe trips in search of pickerel, pike and grey or speckled trout. Five salmon streams are open to anglers-the St. Jean River, the Petite Cascapedia River, the Matane River, the Port Daniel River and the Matapédia River. A joint committee composed of departmental officials and the directors of the federation of fish and game associations recommends the proper legislation for the maintenance of satisfactory fishing and hunting conditions and other problems arising out of the ever-changing conditions of modern life and their effect on the wildlife of the province.

Ontario.-The fishery resources of Ontario are administered by the Fish and Wildlife Branch, Department of Lands and Forests, under the authority of the federal Fisheries Act, the Fishery Regulations for the Province of Ontario, the Ontario Game and Fish Act and the Regulations connected therewith.

Commercial Fisheries.-The commercial fishing industry in Ontario provides employment for about 3,000 persons directly and for many more indirectly, and produces an annual yield of from $45,000,000 \mathrm{lb}$. to $55,000,000 \mathrm{lb}$. of fish. The industry, although widely scattered throughout the province, is centred chiefly on the Great Lakes, particularly Lake Erie. The principal species of fish taken commercially are perch, smelt, whitefish, pickerel, lake trout, white bass, pike, herring, chub, sheepshead, carp, catfish and bullheads, sturgeon, eels, goldeyes, rock bass, sunfish and suckers. Over one hundred smaller inland lakes are commercially fished, principally those in the northwestern portion of the province, and careful management of these lakes is essential to ensure continued production.

The types of fishing boats in use vary from small craft to 60 -foot tugs, and types of gear vary from gillnets, pound-nets and trap-neta, seines and baited hooks to small hand-
operated seines and dip-nets. Fishing methods and equipment have been modernized extensively during the past few years. Diesel-driven steel-hull tugs have replaced steamdriven wooden tugs, such aids as depth-sounding devices, radar, ship-to-shore and ship-to-ship communications have been developed and a better knowledge of the fish and their movements has been established from biological research findings. Modern icing facilities and transportation methods are in use as well as new types of fishing gear. Trawling has proved very efficient in harvesting smelt on a year-round basis in Lake Erie.

Most Ontario fishermen are organized into various local associations. Many of these associations are, in turn, represented by the Ontario Council of Commercial Fisheries which performs important services to the industry. The Ontario Fishermen's Co-operative and its member groups are of interest also in the organization of the fishery in the province.

Sport Fisheries.-Angling in Ontario is rapidly becoming one of the major industries of the province. With an estimated freshwater area of some $68,490 \mathrm{sq}$. miles, the province is one of the most attractive fishing areas on the Continent. Excellent angling opportunities are available for such prized fish as brook, rainbow, lake and brown trout, walleye, smallmouth and largemouth bass, pike and maskinonge. It is difficult to measure the total value of the sport fishing industry to the province but the annual revenue from the sale of angling licences alone (mainly to non-residents, as residents require a licence for provincial parks only) is in the neighbourhood of $\$ 2,500,000$. The management of this valuable resource is administered by a well-trained field staff of conservation officers and biologists located in the 22 forest districts of the province.

Provincial Hatcheries.--Ontario operates 17 hatcheries and rearing stations and excellent results have been produced in the culture and distribution of various species of game fish. The primary species reared in these operations include brook trout, rainbow trout, lake trout, smallmouth and largemouth bass, and maskinonge. Four of the finest troutrearing stations on the Continent are located in this province-at Dorion near Port Arthur, Sault Ste. Marie, Hill Lake near Englehart, and Chatsworth.

Fisheries Research.-Research in Ontario is carried on in the Great Lakes and in inland waters. At the South Bay Mouth Station on Manitoulin Island in Lake Huron, Wheatley on Lake Erie, and Glenora on the Bay of Quinte on Lake Ontario, fishery biological stations are operated for the investigation and study of the commercial and sport fisheries on the respective lakes. In Algonquin Park, detailed studies concerning lake trout, smallmouth bass and brook trout are in progress and management techniques are being tested against the background of a creel census which has been continuous since 1936. Studies are also being conducted on walleye, parasitology and limnology. A selective breeding experiment concerning the hybrid between lake trout and brook trout is progressing; the deep-swimming character of the lake trout and the character of maturity at early age of the brook trout are those being selected for combination in the hybrid. Co-operation by Ontario in the field of sea lamprey control is being extended through the Great Lakes Fishery Commission.

Manitoba.-Commercial fishing has been carried on in Manitoba since 1880. The province has almost 40,000 sq. miles of freshwater and 400 miles of coastline on Hudson Bay but, altogether, about 300 Iakes and rivers, covering $30,000 \mathrm{sq}$. miles, are commercially fished. Some 3,500 persons are employed in primary commercial fishing and an equal number derive part of their living from fish processing and the supply of materials and services to the industry. The industry is particularly important to people living in remote northern communities where fishing provides a major part of their cash income but, even
s0, over two thirds of the catch is taken in the southern part of the province. In 1964-65, Lake Winnipeg produced $9,706,200 \mathrm{lb}$., Lake Manitoba 5,196,800 lb., Lake Winnipegosis $3,562,200 \mathrm{lb}$., and other southern lakes $387,500 \mathrm{lb}$. The northern lakes produced $9,780,000$ lb . The total value to the fishermen in $1964-65$ was $\$ 3,719,566$ and the value as marketed was $\$ 6,408, \mathrm{Il} 6$. The average marketed catch for the past five years was $32,600,000 \mathrm{lb}$., worth $\$ 3,900,000$ to the fishermen and $\$ 7,000,000$ at the wholesale level after processing. About half the catch is taken during open water and the remainder through the ice in winter.

There are 15 kinds of fish caught commercially in Manitoba but those of highest annual value to the fishermen are pickerel, whitefish, sauger and pike. Over 90 p.c. of the catch is exported, mostly to the United States. A quantity of the less valuable kinds and some processing waste are used as food on mink ranches and for the making of meal; a small industry to process white whales (beluga) for oil and animal food has been established on Hudson Bay. Capital investment in gear, boats, warehouses, etc., approaches $\$ 5,000,000$.

Supervision of commercial fishing operations and the enforcement of the Manitoba Fishery Regulations occupy a staff of Conservation Officers who patrol the province using diesel boats during the open water season, snowmobiles and light trucks during the winter and aircraft in remote areas. The Fisheries Branch of the Department of Mines and Natural Resources, in co-operation with the Department of Health, conducts a systematic program of plant inspection to raise the standard of sanitation and improve the processed product.

A continuing program of biological research is conducted by the Fisheries Branch to provide management information in the interest of a sustained annual yield and a program has been established to test and prove new improved netting and gear which will increase production and lower operating costs. Close liaison is maintained with the federal Department of Fisheries and the Fisheries Research Board in the effort to develop new fish products and effect more complete utilization of the province's fishery resources.

Fish culture activities include two pickerel hatcheries (Lake Manitoba and Lake Winnipegosis), a whitefish hatchery (Lake Winnipeg), a trout hatchery (Whiteshell Provincial Park) and two spawn-taking camps. Fish to replenish the commercial fishing waters are raised in the pickerel and whitefish batcheries and several kinds of trout as well as splake and sockeye salmon are raised in the Whiteshell hatchery to be planted in sport fishing waters.

Sport Fisheries.-Angling continues to be one of the most popular and most rapidly growing forms of outdoor recreation in Manitoba, and since ice-fishing has come into vogue many anglers are now fishing over the entire year. About 100,000 licensed fishermen, 15,000 of them from outside the province, spent an estimated $\$ 11,000,000$ in pursuit of this sport. Although their catch of about $5,000,000 \mathrm{lb}$. a year is considerably less than the commercial fishing yield, the monetary value to the province of the sport fisheries is higher. Extensive water areas are reserved for sport fishing only but others are managed for both types of use. Walleye (pickerel), northern pike and the various trout species are the main species taken. Either or both of the first two species occur in nearly every body of water in the province but trout require a more specialized habitat and occur only in select lakes and rivers.

Saskatchewan.-Approximately 32,000 sq. miles of water, about one eighth of the province's area, provide the basis for Saskatchewan's fishery resource, a resource that contributes much to the economic and recreational activity of the province. Administra tion of the fisheries is the responsibility of the Fisheries Branch of the Department of Natural Resources; its head office is located in Prince Albert. The Branch has three
main Divisions-Management, Research and Fish Culture-which are responsible for planning policies; developing programs to ensure the proper management and utilization of the fishery resource; interpreting and explaining policies, programs and regulations; administering the Acts and Regulations (both federal and provincial); and adapting regulations to meet changing conditions. Its objective is to encourage efficient multi-use of the fishery, taking into consideration the interests of the various groups concernedcommercial fishermen, mink ranchers, anglers and the public generally.

The commercial fishery in Saskatchewan averages about $14,500,000 \mathrm{lb}$. annually and consists mainly of whitefish, lake trout and walleye. In 1964 the total catch of $14,306,000$ lb. had a market value of $\$ 3,080,000$, of which $\$ 1,490,000$ was received by the fishermen. This was a slight increase over the previous year, the result of a better harvest of northern pike and tullibee. Eighteen local fishermen co-operatives, representing 1,350 fishermen, marketed 66 p.c. of the total harvest in 1964.

During the year, 324 free Indian permits and 896 domestic fishing licences were issued, resulting in a catch of about $1,200,000 \mathrm{lb}$. of fish of all species; the 62 mink ranchers licensed to fish for 9,888 breeders produced an estimated $5,800,000 \mathrm{lb}$. of rough fish (euckers, burbot and ciscoes).

The Fish Research Division conducts biological surveys on most of the large lakes and on many smaller water bodies and streams in the province to provide information for the development of fisheries management policies and programs. The current program is designed to: determine productivity of water bodies; secure information on abundance and relationship of fish species; investigate ecology and assess factors affecting environment of fish; develop techniques to achieve maximum harvest of fish populations without prejudice to continued production; and develop techniques to facilitate rehabilitation and stocking of small water bodies. Continuing limnological and fisheries surveys are conducted on lakes along the Lac la Ronge highway; along highway 106; on the Saskatchewan River Delta; and on Jackfish, Murray, Green and Turtle Lakes. A long-term creel census is being taken on Lac la Ronge and studies have been conducted to test survival of young northern pike.

Spawn camps are operated in northern Saskatchewan to collect lake trout, whitefish, northern pike, walleye and arctic grayling eggs. These, along with rainbow and eastern brook trout eggs received from the United States and alpine char from France, have been incubated and hatched at the Fish Culture Station at Fort Qu'Appelle. Millions of fry are stocked in many water bodies in the province.

Sport Fishing.-Saskatchewan has some of the finest sport fishing waters in Canada, about 100,000 angling licences being issued annually. To meet recreational demands, a study of 84 water bodies was undertaken recently and seven small lakes along the Churchill River road have been rehabilitated. The survival of kokanee (land-locked salmon) in a rehabilitated lake marked the first successful stocking of this species in provincial history. A new Saskatchewan Anglers' Derby record was set in the goldeye division by a 3-lb.2-oz. specimen taken in the Saskatchewan River. Other top prizes went to anglers for a $33-\mathrm{Ib} .9$-oz. northern pike, a $12-\mathrm{lb}$. $3-\mathrm{oz}$. walleye, a $3-\mathrm{lb} .12 .5-\mathrm{zz}$. brook trout, and a $3 \mathrm{-lb}$. $9.5-\mathrm{oz}$. arctic grayling.

Alberta.-Commercial and sport fishing is administered by the Fish and Wildlife Division of the Department of Lands and Forests under the authority of the Fisheries Act (Canada) and the Fishery Act (Alberta). Production of commercial fish for the yesr ended Mar. 31, 1965 was $12,296,600 \mathrm{lb}$., with a landed value of $\$ 791,044$ and a marketed
value of $\$ 1,243,481$. Lake whitefish, the most valuable of commercially caught fish, accounted for 38 p.c. of the total marketed value but represented only 12 p.c. of the total landings. Tullibee, a low-priced fish used primarily for animal food, accounted for 71 p.c. of the total quantity and 43 p.c. of the marketed value. Other species taken in order of marketed value were pickerel (walleye), pike, perch, burbot (ling) and lake trout. Of the total quantity taken, $1,365,664 \mathrm{lb}$. were marketed outside the province and of that amount $1,272,300 \mathrm{lb}$. were exported to the United States.

Sport Fisheries.-Angling licence salea number about 125,000 each year. The province operated fish culture facilities for stocking angling waters at Calgary and Raven where $1,913,980$ trout, grayling and kokanee (land-locked salmon) were produced in 1965. Trout plantings are made in lakes and reservoirs but warm water stockinge are limited to the transfer of adult walleye, pike and perch to a few selected lakes for the purpose of introducing these species.

A staff of four district biologists, two assistant biologists and several student employees carried out biological surveys and management projects during 1965. For the first time, surveys were extended to lakes on the Canadian shield in extreme northeastern Alberta, an area offering considerable potential for sport fishing for lake trout. Reclamation of lakes by chemical treatment and habitat destruction problems also received attention.

British Columbia.-A Fisheries Office, which was organized in 1901-02 and became very active in fish culture work, building and operating fish hatcheries and instituting ecientific research into various fishery problems, was superseded in 1947 by the Department of Fisheries which in turn was superseded in 1957 by the Department of Recreation and Conservation, Commercial fisheries are represented today as the Commercial Fisheries Branch of the Department of Recreation and Conservation. Broadly speaking, the administrative and regulative jurisdiction over the fisheries of British Columbia resta with the federal authority. The ownership of the fisheries in the non-tidal watera is vested in the Crown in the right of the province, as are the shell fisheries auch as oyster fishing and clam fishing in tidal waters. The province administers these fisheries although the regulations covering them are made under federal Order in Council on the advice and recommendation of the province.

The provincial Fisheries Act provides for the taxation of the fisheries and, under civil and property rights, for the regulation and control of the various fish processing plants under a system of licensing. Provision is also made for arbitration of disputes regarding fish prices that may arise between the fishermen and operators of the various licensed plants. The administration of the Act involves the collection of revenue and the supervision of plant operations.

Regulation and administration of net fishing in the non-tidal waters of the province, including commercial fishing and authority for regulation of the game fisheries in non-tidal waters, is vested in the Fish and Game Branch which operates a number of trout hatcheries and egg-taking stations for re-stocking purposes.

The Branch co-operates closely with the Fisheries Research Board of Canada. The biological research into those species of shellfish over which the province has control, principally oysters and clams as well as marine plants, is conducted by the Fisheries Research Board of Canada at the Pacific Biological Station, Nanaimo, B.C., under agreement with the federal and provincial authorities. The object of this research is to encourage the industry to produce better products more economically and to enable the Commercial Fisheries Branch to regulate the various species so that maximum exploitation may be obtained on a sustained-yield basis.

## PART II.-FURS

## Section 1.-The Fur Industry*

Although the relative importance of the fur industry in the Canadian economy has declined through the years, the production of wild and farm furs continues to contribute substantially to the national income and to individual income in certain areas. In addition to returns from the sale of pelts, the thriving fur farming industry has boosted the economy of many areas through creation of a chain of associated businesses such as feed supply houses and pelt processing stations. Demand from the industry for feed stuffs has resulted in the utilization of much of what was formerly waste from meat packing operations and poultry processing plants. In addition, some $50,000,000 \mathrm{lb}$. of rough fish and fish frames, formerly of little or no value, are used annually by this industry,

The value of raw furs produced in Canada in the 1964-65 season amounted to $\$ 36,613,350$, ranched furs accounting for 58.4 p.c. and wild pelte for the remainder. Canada accounts for about one twelfth of the world production of ranched mink pelts and one quarter of the world production of wild furs. A large proportion of the Canadian fur crop is exported, the principal varieties being mink, beaver, seal, muskrat and fox; in 1965 the value of raw fure exported was $\$ 29,503,777$ and during the same year raw furs worth $\$ 19,144,817$ were imported.

Fur Trapping.-The value of the wild furs caught in 1964-65 was $\$ 15,236,798$. In that season Canadian trappers took $4,163,277$ pelts of all species, ranging from 564 polar bear skins which realized an average price of $\$ 99.12$, to $1,503,756$ squirrel pelts averaging $\$ 0.59$. An eatimated 50,000 Canadians participate annually in fur trapping activities which in recent seasons have yielded an average revenue of approximately $\$ 15,000,000$ including the value of the sealskin crop. Returns from the trapping enterprise are distributed through countless northern villages, providing a welcome source of revenue for many part-time trappers as well as for the professionals.

A good proportion of the wild fur catch comes from the central and southern portions of the provinces. Some species have adjusted to life in partly settled areas and each year substantial catches of beaver, muskrat, mink, raccoon, wolf and squirrel are made in areas of mixed farm and bushland. As a result of the failure of raw fur prices to keep pace with rising commodity costs, most of the trappers in these areas operate on a part-time basis only. Many are full-time wage-earners who carry on their trapping activities during weekends or on holidays.

In the northern areas also, the production of most of the important fur varieties is being well maintained. Comparatively few opportunities for wage employment exist in these areas and trapping remains an important source of revenue. Since 1938 no trapping licences have been issued to non-Indians in the Northwest Territories, other than to individuals holding licences at that date and their offspring. Consequently, most of the fur eatch in the Northwest Territories is taken by Indian, metis and Eskimo trappers. A trend has developed in recent years whereby native trappers, who formerly spent the winter months along with their families on the trapline, now congregate with their dependants in the settlements. This community-type living has certain undesirable results; the areas around the settlements tend to be over-trapped and the less accessible areas neglected, with consequent waste of the fur resource.

Fur Farming.-Mink is by far the most important fur bearer raised on fur farms; chinchilla, fox and nutria are also raised but these account for leas than 1 p.c. of the total value of pelts produced.

[^195]Mink farming, which had its beginnings in Canada around 1910, is now carried on in all provinces, the principal producers, in order of importance, being Ontario, British Columbia, Manitoba and Alberta. The following figures indicate the growth of the industry aince 1930:-

| Year | Pell Production | Averape Realization | Year | Pelt Production | Average Realization |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \% |  | No. | \$ |
| 1930. | 3,284 | 10.52 | 1960. | 1,203,853 | 14.03 |
| 1935. | 30,558 | 10.58 | 1961. | 1,271,449 | 14.50 |
| 1940. | 229,202 | 9.64 | 1962. | 1,205,672 | 15.13 |
| 1945. | 255,988 | 21.51 |  | 1,205,012 | 15.13 |
| 1950. | 589,352 | 17.08 | 1963. | 1,400,021 | 15.82 |
| 1955... | 786,760 | 20.07 | 1964.... | 1,418,368 | 14.82 |

Production in 1964 was 1.3 p.c. bigher than in the previous year but, because of poorer market conditions, the value was down 4.4 p.c.

The mink breeding season extends from early March to early April. After a gestation period varying from 40 to 70 days, the litter of three to six kits is born. At age five to six months, the mink are fully grown and at this stage receive all possible attention with a view to developing deep, silky pelts which will bring top prices. Pelting starts around mid-November and by the end of that month shipments of raw pelts begin arriving at the fur auction houses. Mink farming has become a specialized business that calls for a high degree of akill, experience and industry. The successful breeder must have a thorough knowledge of his animals' habits and requirements. Mink must be fed a carefully prepared diet, tailored to meet the varying demands of the breeding, growing and furring-out seasons. Also, a sound understanding of the complex field of genetics is required for selective breeding programs through which breeding herds may be improved and new colours produced. Disesses of mink have been the subject of considerable research, as a reault of which most mink farmers now carry out programs of preventive vaccination for control of the major diseases.

Advanced ranching practices and the use of labour-saving devices enable the producer to operate very efficiently, permitting a single operator to tend many animals. Mink are usually housed in roofed structures with more or less open sides. These sheds may contain up to several thousand animals each and the regular pattern of the pens within the structure facilitates the use of automatic watering and powered feeding systems. Even 80, production costs in the 1960-64 period showed considerable increase and mink pelt prices failed to keep pace. One result of the lower profit margins has been an acceleration of the trend toward large producing units and the decline in the numbers of small operators producing fewer than 100 pelts a year. In 1950 there were 589,352 mink pelts produced on 2,557 farms, an average of 230 pelts per unit; in 1960 there were $1,203,853$ mink pelts produced on 2,331 farms, an average of 516 per unit; and by 1964 the number of mink farms had declined to 1,491 but pelt production increased to $1,418,368$, an average of 951 per farm.

Chinchillas are being raised successfully in all provinces, the principal producers in 1964, in order of importance, being British Columbia, Ontario, Quebec and Alberta. Most of the Canadian chinchilla pelts are exported in the raw state to the United States where they are dressed before being offered for sale. The pelts are sold through two outlets in New York City and most of the Canadian skins are intergorted with pelts produced in the United States. This arrangement benefits producers in both countries since the resulting larger quantities render it poasible for the grading specialists to make up "lots"
containing pelts well matched as to size, colour and quality. The following figures show the production of chinchilla pelts in Canada since 1955:-

| Year | Pelt <br> Production | Average Realization | Year | Pelt Production | Average Realtzalion |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \$ |  | No. | \$ |
| 1955. | 1,742 | 27.50 | 1960. | 9,067 | 13.08 |
| 1955. | 2,705 | 9.65 | 1961. | 10,558 | 14.07 |
| 1957.. | 4,701 | 13.84 | 1962. | 11,193 | 13.56 |
| 1958. | 8,336 | 13.43 | 1963. | 12,226 | 14.03 |
| 1959. | 8,558 | 13.17 | 1964. | 12,842 | 13.22 |

In 1964, 782 fox pelts were produced on 36 Canadian farms, a continuation of the decline that began following the peak production of 240,827 pelts in 1939. It is interesting to note, however, that, sparked by a strong demand from Japan, the 1964 production realized an average price of $\$ 43.37$ per pelt, the highest return since 1980 .

Fur Marketing.-The bulk of the Canadian fur crop is sold in one or other of the eight fur auction houses located in Montreal, North Bay, Winnipeg, Regina, Edmonton and Vancouver. The marketing season extends from December each year through to the following June. By this time most of the current season's production has been moved at the auction level, although clean-up sales in August or September are not unusual.

The December auctions offer substantial quantities of the new season's ranched mink pelts but only limited quantities of wild furs; the latter become available in larger quantities in January and later months. Canadian pelts are traditionally sold in the raw or unprocessed state, thus facilitating entry into the many countries that maintain tariffs on imports of processed furs.

Throughout the 1965-66 selling season, there was a strong American and European demand for all types of Canadian furs, especially from West Germany. In addition to the demand for ranched mink, the dominant fur of the industry, there was a noticeable interest shown in many of the wild fur varieties including the long-haired types which have largely been neglected in recent years. As a result, prices realized at auction for both wild and ranch-raised pelts were higher than in 1964-65.

Most Canadian mink ranchers are members of the Canada Mink Breeders' Association, which promotes Canadian ranch-raised mink in the domestic and foreign markets and works closely with fur auction outlets in formulating plans for marketing the annual pelt crop. Funds for advertising and other expenditures are obtained through a (voluntary) deduction of $1 \frac{1}{2}$ p.c. of the sales price of all members' pelts sold at auction. In the 1964-65 season these deductions produced a revenue of approximately $\$ 290,000$.

One method of promoting Canadian furs in the overseas market is the annual exhibit of a comprehensive selection of this country's furs at the International Fur Fair, Frankfurt, West Germany. This is the largest and most important exhibition of its type in the world and the annual attendance of around 20,000 , mainly members of the European fur industry, includes a good proportion of the overseas purchasing power. An indication of the success of this exhibition, sponsored by the Department of Trade and Commerce, is the recent increase in the number of fur buyers who have come to Canada to obtain their requirements. Mink producers and trappers alike have benefited through the additional competition produced in Canadian auctions by these visitors.

## Section 2.-Fur Statistics

## Subsection 1.-Fur Production and Trade*

Total Fur Production.-Early records of raw fur production were confined to the decennial censuses when account was taken of the number and value of pelts obtained by trappers. In 1920 the Dominion Bureau of Statistics commenced an annual survey of

[^196]raw fur production. For a number of years the statistics were based on information supplied by the licensed fur trappers. More recently, annual statements based on royalties, export tax, etc., have been made available by the provincial game departments (except Prince Edward Island), and these statements are used in the preparation of the statistics issued annually by the Bureau. Figures for Prince Edward Island are based on returns supplied to the Dominion Bureau of Statistics by fur dealers in that province.

## 1.-Pelts of Fur Bearing Animals Produced and Percentage Sold from Fur Farms, Years Ended June 30, 1946-65

| $\begin{aligned} & \text { Year Ended } \\ & \text { June } 30 — \end{aligned}$ | Pelts |  | Percentage of Value Sold from Fur Farms | Year Ended June 30- | Pelts |  | Percentage of Value Sold from Fur Farms |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Value |  |  | Number | Value |  |
|  |  | \% |  |  |  | \$ |  |
| 1946. | 7,593,416 | 43, 870, 541 | 30 | 1956.... | 7,727,264 | 28,051,746 | 56 |
| 1947. | 7,486,914 | 26, 3449,997 | 37 | 1957... | 6,919,724 | 25,592, 130 | ${ }_{60}^{57}$ |
| 1948. | 7,952,146 | 32,232,992 | 37 | 1958.. | 6,440,319 | 26.335.109 | 60 |
| 1949. | 9,902,790 | 22,899,882 | 33 | 1959. | 5,370,531 | $25,800.555$ | 62 |
| 1950. | 7,377,491 | 23,184,033 | 34 |  | 5, 999,414 | 31,186,078 | ${ }_{59}^{60}$ |
| 1951. | $7,479,272$ $7,931,742$ | 31, 134, 400 | 36 42 | 1961. | $6.237,360$ $\mathbf{5 , 7 7 1}, 129$ | 28,737,087 | 59 64 |
| 1953. | 7,931,742 | 23, 249,680 | 43 | 1963. | 5,123,395 | 31,943,418 | 62 |
| 1954. | B,274, 727 | 19.287,522 | 49 | 19641. | 4,829,717 | 39,493,233 | 67 |
| 1955. | 9,670,796 | 30,509,515 | 43 | $1965{ }^{2}$ | 5,599,070 | 35,613,350 | 58 |

${ }^{1}$ Includes 257,123 seal pelts valued at $\$ 4,080,411$; figures not available for previona yeara.
2 Includea 253,469 seal pelts valued at $\$ 3,517,640$.

Ontario continues to lead the provinces in value of fur production, accounting for 24 p.e. of the total in the $1964-65$ season. British Columbia followed with 15 p.c., Manitoba with 13 p.c., Alberta 13 p.c., Quebec 11 p.c., Saskatchewan 6 p.c., the Atlantic Provinces 6 p.c., and the Yukon and Northwest Territories 5 p.c.
2.-Pelts of Fur Bearing Animals Produced, by Province, Years Ended June 30, 1964 and 1865

| Province or Territory | $1964{ }^{\text {c }}$ |  |  | 1985 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Pelts | Value | Percentage of Total Value | Pelts | Value | Percentage of Total Value |
|  | No. | \$ |  | No. | \$ |  |
| Newfoundland. | 49,662 | 621, 761 | 1.6 | 50,217 | 531, 641 | 1.5 |
| Prince Edward Islond. | 2,956 | 46,086 | 0.1 | 3,491 | 52, 112 | 0.1 |
| Nova Scotia.... | 104,144 | 1,378,014 | 3.5 | 128,086 | 1,328,085 | 3.6 |
| New Brunawic | 46,006 | - 244.602 | 0.6 | 49,619 450.911 | 341,132 | 0.9 10.5 |
| Ontario. | 1, 197,286 | 10,844,157 | 27.5 | 1,029,738 | 8,938,984 | 24.4 |
| Manitoba | - 623.846 | 4,855,282 | 12.3 | -736,282 | 4,789,902 | 13.1 |
| Saskatchewan | 460.803 | 2,271,089 | 5.8 | 659,063 | 2,312,198 | 6.8 |
| Alberta. | 898,088 | 4, 843, 872 | 12.3 | 1,395,936 | 4,705,666 | 12.9 |
| British Columbia. | 453,347 | 5, 403,703 | 13.7 | 566,027 | 5, 654,587 | 15.4 |
| Yukon Territory. | 86,394 |  | 0.4 |  | 172, 938 | 0.5 |
| Northwest Territories | 265,656 | 1,854,764 | 4.7 | 299,653 | 1,535,926 | 4.2 |
| Cansdal. | 4,829,717 | 35,493,233 | $\cdots$ | 5,595,07e | 36,613,350 | *** |

[^197]Wild Fur Production.-The principal kinds of wild fur pelts taken, according to their value in 1964-65, were beaver, seal, muskrat, mink, squirrel, otter, white fox, lynx, and marten. These nine kinds of pelts accounted for 94.8 p.c. of the total value of wild pelts produced.

## 3.-Pelts of Wildife Fur Bearing Anlmals Taken, by Kind, Years Ended June 30,1964 and 1965

| Kind | 1964 |  |  | 1965 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Pelte | Total Value | Average Value | Pelte | Total Value | Average Value |
|  | No. | \% | \$ | No. | \$ | \% |
| Badger. | 409 | 1,175 | 2.87 | 385 | 1,098 | 2.78 |
| Bear- |  |  |  |  |  |  |
| White........ | 482 683 | 38,082 9,976 | 68.63 14.61 | 564 1.211 | 55,906 | 99.12 |
| Grizzly....... | 19 | 9.885 | 15.60 | 1,22 | 21,330 | 15.09 |
| Beaver.. | 463,837 | 6,181,030 | 13.33 | 415,261 | 4,905,277 | 11.81 |
| Coyote or prairie wol | 19,366 | 118.990 | 6.14 | 22,566 | 150,113 | 6.65 |
| Ermine (weasel) | 124,079 | 99,701 | 0.80 | 180,259 | 222,909 | 1.24 |
| Fisher......... | 8,364 | 92,252 | 11.03 | 7,950 | 70,713 | 8.88 |
| Blue. | 171 | 1.061 | 6.20 | 207 | 1,499 | 7.24 |
| Cross and red. | 19,214 | 83.781 | 4.36 | 22,010 | 130,278 | 5.92 |
| Silver. | 293 | 1,685 | 5.78 | 472 | 5,052 | 10.70 |
| White | 32,447 | 489,067 | 15.07 | 40,831 | 448,112 | 10.97 |
| Not epecified. |  |  | 3.50 |  | 40855 | 6.41 |
| Lymz.......... | 36.197 | 529.674 | 14.63 | 24,534 | 408,420 | 16.65 |
| Marten | 49,664 | 439,033 | 8.84 | 40,948 | 369,191 | 9.02 |
| Mink. | 121,459 | 1,971,186 | 16.23 | 106,863 | 1,530,648 | 14,32 |
| Muskrat | 1,433,057 | 1,962,381 | 1.37 | 1,387,022 | 1,832,288 | 1.32 |
| Otter. | 19,802 | 547,286 | 27.64 | 1, 19,315 | 556,507 | 28.81 |
| Rabbit. | 143,873 | 53,393 | 0.37 | 105,790 | 83,967 | 0.32 |
| Racoon | 25,975 | 49,611 | 1.91 | 25,785 | 59,014 | 2.29 |
| Feal- North Pacifict. |  |  | 53.70 | 13,462 | 762,922 | 56.67 |
| Hair, N,W.T.. ... | 46, 966 | 691,764 | 14.73 | 68, 332 | 757,017 | 11.08 |
| Hair, Que. | 21,342 | 317,996 | 14.90 | 24,141 | 359,701 | 14.90 |
| Hair, Atlantic Coast | 177,913 | 2,485,000 | 13.97 | 147,534 | 1,838,000 | 11.10 |
| Skunk. |  |  | 0.43 | 1,039 |  | 0.53 |
| Squirrel. | 653,175 | 379,525 | 0.58 | 1,503, 756 | 882, 290 | 0.59 |
| Widdeat | 1,133 | 4,675 24.067 | 4.13 18.33 | 1,553 | 10,288 14,315 | 16.62 |
| Wolf...... | $\begin{array}{r}1.474 \\ \hline 178\end{array}$ | 24,067 6,401 | 18.33 13.36 | 866 518 | 14,315 8,769 | 16.91 |
| Totals. | 3,413,151 | 17,159,884 | ** | 4,163,277 | 15,236,788 | -* |

[^198]Fur Farm Production.-Mink now accounts for over 99 p.c. of the total value of fur farm production. In 1964 the number of mink pelts taken continued upward, reaching $1,418,368$ with a value of $\$ 21,165,324$. The total number of all types of pelts taken ws $1,435,803$ with a value of $\$ 21,376,685$.

On the whole, there was little change in the number of fur farms operating in 1964 compared with 1963, some provinces reporting small increases and others small decreases.

Mink farms increased in number from 1,476 to 1,491 and the number of animals on those farms at year-end from 583,312 to 641,818 . Chinchilla farms also increased in number from 451 to 477 and the number of animals increased from 39,656 to 49,298 . In 1964, 151 farms raising nutria reported 3,986 animals and 36 farms raising fox had 762 animals; the number of nutria decreased by 2,734 over 1963 and the number of fox increased by 4.

## 4.-Fur Farms and Value of Pelts Produced Thereon, by Province, 1963 and 1984

| Province | Fur Farma at Year Ead |  | Value of Pelts <br> Produced on Far Farms |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 1963 | 1964 | 1963 | 1964 |
|  | No. | No. | * | 8 |
| Newfoundland. ...... | 38 | 32 | 556,053 | 444,959 |
| Prince Edward Island.. | 131 | 10 | 45,525 | 51,395 |
| Nova Sootia. | 121 | 138 | 1,246,474 | 1,157,712 |
| New Branswick | 33 142 | $\begin{array}{r}35 \\ 135 \\ \hline\end{array}$ | 88,009 $1,488,561$ | 87,443 |
| Ontario.. | 816 | 758 | 6,897, 218 | 8,056,649 |
| Manitobs. | 199 | 185 | 3,118,619 | 3,114, 571 |
| Saskatchewan. | 135 | 132 | 1,243,565 | 1,393,374 |
| Alberta. | 257 | 302 | 3,010.309 | 2,818,780 |
| British Columbia. | 402 | 404 | 4,640,141 | 4,876,248 |
| Totals. | 2,15¢ | 2,131 | 22,333,5851 | 21,376,6851 |

1 Ineludee value of same pelte not allcoated by province.
5.-Number and Value of Pelts Produced on Fur Farms, by Kind, 1963 and 1964

| Kind | 1963 |  | 1964 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Pelts | Value | Pelts | Value |
|  | No. | \$ | No. | \$ |
| Minl | 1,400,021 | 22,142,285 | 1,418,3¢8 | 21,165,334 |
| Standard. | 264,668 | 5,417,755 | 359,616 | 5,257,586 |
| Grey. | 49,486 | 606,948 | 38,584 | 520,499 |
| Dark blue. | 77, 2880 | 1,113, 608 | 61,721 | 998,029 |
| Brown.... | 484,280 | 4,233,171 | 264,242 484,721 | 4, $6.810,329$ |
| Beige. | 205,469 | 2,917,659 | 170,830 | 2,601,741 |
| White. | 60,835 | 765,913 | 48,654 | 685,534 |
| Chinchilla. | 12,226 | 171,560 | 12,842 | 164,711 |
| For. | 850 | 12,525 | 782 | 33,915 |
| Blae.. | 55 | 830 | 24 | 1,041 |
| Platinum | 320 | 4,829 | 413 | 17,912 |
| Silver. | 409 | 6.172 | 319 | 13,835 |
| Other. | 46 | 694 | 26 | 1,127 |
| Nutria. | 3,489 | 6,978 | 3,801 | 7,612 |
| Totals ${ }^{\text {a }}$ | 1,416,411 | 22,333,595 | 1,435,803 | 21,376,485 |

${ }^{1}$ Includea pelts not allocated by type.
Exports and Imports. - The Canadian fur trade, both export and import, is mostly in undressed furs, the value of dressed and manufactured furs going out of or coming into Canada being a comparatively small proportion of the total. Canadian fur exports consist largely of those produced in greatest abundance, mink being by far the most valuable followed by beaver, seal, muskrat, fox, and squirrel. Mink, Persian lamb, dressed seal, fox, muskrat and raccoon make up a large part of the imports. Exports and imports of furs, undressed, dressed and manufactured, to and from Britain, the United States and all countries, are given for the years 1964 and 1965 in Table 6.

## 6.-Exports and Imports of Furs, by Kind, 1964 and 1965

| Kind of Fur | 1964 |  |  | 1965 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Britain | United States | $\begin{gathered} \text { All } \\ \text { Countries } \end{gathered}$ | Britain | United States | $\begin{gathered} \text { All } \\ \text { Countries } \end{gathered}$ |
|  | Exports |  |  |  |  |  |
| Undressed- | \$ | \$ | \$ | \$ | \$ | \$ |
| Beaver | 1,165,024 | 2,366,978 | 5,218,665 | 743,845 | 2,289,683 | 3,937,440 |
| Chinchilla. |  | 231,262 | 248, 957 |  | 202,417 | 202,417 |
| Ermine or weasel | 158,020 | 14,736 | 182,474 | 202,515 | 70,859 | 273,577 |
| Fisher. | 54,774 | 44,909 | 119,883 | 29,981 | 52,047 | 94,129 |
| Fox, all types. | 9,058 | 586,018 | 686,273 | 37,629 | 1,038,143 | 1,305, 498 |
|  | 213,676 | 212,096 | 458,653 | 217,638 | 320,147 | 556,112 |
| Marten | 123,415 | 392,910 | 521,996 | 94,753 | 209,018 | 311,312 |
| Mink. | 2,027,316 | 12,501,003 | 17,560,350 | 1,641,890 | 12,753,214 | 18,247,169 |
| Muskrat | 1,289,335 | 47,009 | 1,464,308 | 1,512,046 | 149,066 | 1,792,913 |
| Otter. | 22,141 | 74,970 | 162,777 | 7,544 | 104,084 | 232,473 |
| Rabbit. | 1,225 | 32,577 | 55,596 | , | 61,815 | 101,622 |
| Raccoon | 5,942 | 30,688 | 37,702 | ${ }^{1}$ |  | 1 |
| Seal. | 1,739,643 | 134,963 | 2,766,298 | 1,326,158 | 158,356 | 2,058,128 |
| Squirre | 539, 410 | 2,372 | 543,209 | 804,243 | 377 | 804,715 |
| Wolf. | 16,201 | 127,151 | 143,352 | 11,485 | 108,368 | 124,399 |
| Other. | 48,843 | 74,717 | 157,106 | 56,198 | 151,105 | 263,415 |
| Dressed- |  |  |  |  |  |  |
| Mink. | 32,826 | 48,717 | 444,970 | 4,375 | 79,821 | 327,456 |
| Raccoon. |  | 615,179 | 615,179 |  | 1,038,897 | 1,046,931 |
| Fur plates, mats, etc. | 850 | 24,173 | 45,738 | 2,220 | 4,704 | 21,917 |
| Other.. | 169,649 | 1,265,325 | 2,378,022 | 86,423 | 1,582,752 | 2,442,152 |
| Fur goods apparel. | 2,182,022 | 669,436 | 6,227,931 | 1,282,337 | 747,250 | 6,053,199 |
| Totals..... | 9,799,730 | 19,497,189 | 40,039,449 | 8,061,280 | 21,122,123 | 40,196,974 |
|  | Imports |  |  |  |  |  |
|  | \$ | \$ | 8 | 8 | 8 | \$ |
| Chins and Jap mink | - | 2,767 | 244, 085 | 14,643 | 1,807 | 241,730 |
| Fox................. | 541,411 | 284,229 | 1,202,954 | 1,117,800 | 512,858 | 2,454,128 |
| Kolinsky | 19,598 | 14,500 | 167,716 | 1, 90,997 | 10,995 | 320,105 |
| Mink.... | 1,553,141 | 3,088, 728 | 8,788,275 | 1,259,566 | 3,505,473 | 8,988,104 |
| Muskrat. |  | , 811,412 | 8,811,412 |  | 842,729 | 851,247 |
| Persian la | 862,001 | 1,968,927 | 5,356,324 | 542,049 | 1,447,211 |  |
| Rabbit. | 二 | 153,956 | 207,399 785,798 |  | 150,291 $1,528,545$ | 199,765 |
| Raccoon | 29,354 | 785,798 4,883 | 785,798 53,818 |  | 1,528,545 | 1,538,679 70,984 |
| Squirrel | 29,354 181,528 | 4,883 $1,321,925$ | 53,818 $1,725,673$ | 9,801 195,425 | -945,182 | 1,574,311 |
| Dressed- |  |  |  |  |  |  |
| Hatters' furs. | 1,258 | 169,730 | 506,676 | - | 149,406 | 377,083 |
| Mink | 650 | 567,906 | 593,116 | 6,433 | 530,470 | 543,043 |
|  | 25,674 | 2,772,883 | 2,872,792 | 12,996 | 2,034,642 | 2,198,494 |
| Sheep and lamb | 67,186 | 103,841 | 391,637 | 111,240 | 165, 541 | 1,010,204 |
| Fur plates, mats, etc. | 16,382 | 421,640 | 583,016 | 25,476 | 588,150 | 755,890 |
| Other................ | 55,928 | 517,303 | 815,902 | 153,983 | 514,205 | 799,333 |
| Fur goods apparel | 17,936 | 141,586 | 191,531 | 26,321 | 180,549 | 253,511 |
| Tota | 3,372,047 | 13,132,014 | 25,308,124 | 3,566,730 | 13,109,899 | 26,225,584 |

${ }^{1}$ Included in "Other".

## Subsection 2.-The Fur Processing Industry

The rather general term "fur processing" includes the fur dressing and dyeing industry and the fur goods industry. The former is concerned with the dressing or dyeing of pelts on a custom basis and the latter is a manufacturing industry that makes up fur goods such as coats, scarves and gloves.

In the 1962 survey, as explained in Chapter XVI on Manufactures, a change was made in the "total activity" approach; Tables 7 and 8 give selected statistics on the new basis for $1962-64$. In 1964, the number of skins treated was $4,831,560$, of which mink comprised 30 p.c., muskrat 18 p.c., Persian and other types of lamb 13 p.c., raccoon 9 p.c., sheep, shearling and other types of sheep 5 p.e., and all other types of skins 25 p.c.
7.--Principal Statisties of the Fur Dressing and Dyeing Industry, 196?-64

| Item | 1962 | 1963 | 1964 |
| :---: | :---: | :---: | :---: |
| Establighments................................................ . No. | 19 | 18 | 16 |
| Administrative and Other Salaried Employees- |  |  |  |
|  | ${ }_{25}^{92}$ | 72 | 68 |
|  |  |  |  |
| Production and Related Employees- |  |  |  |
| Male. ........................................................ No. | 781 | 763 | 841 |
| Female..................................................... ${ }_{\text {* }}$ | 137 | 136 | 121 |
| Wages paid.................................................... | 3,209,152 | 3,368,468 | 3,155,044 |
| Cogt of materials used in manufacturing....................... | 1,586.469 | 1,530,371 | 1,087,718 |
| Pelts treated.............................................. No. | 6,229,747 | 5,738,549 | 4,831,560 |
| Amount received for treatment of furs and other manufacturing revenue. | 7,148,496 | 7,013,118 | 6,559,077 |

The shipments of ladies' fur coats and jackets by all industries in 1964 numbered 128,117 and were valued at $\$ 41,166,000$.
8.-Principal Statistics of the Fur Goods Industry, 1962-64

| Item | 1962 | 1963 | 1964 |
| :---: | :---: | :---: | :---: |
| Establishments................................................. . . . . . ${ }_{\text {. }}$ | 429 | 419 | 483 |
| Administrative and Other Salaried EmployeesMale <br> Female <br> Salaries paid | 496 179 $3,310,355$ | 461 174 $3,448,086$ | 448 183 $3,492,936$ |
| Production and Related Employees- <br> Male. <br> Female <br> Wages paid | 1,712 9.928 $9,342,619$ | 1,500 $8,987,115$ | $\begin{array}{r} 1,596 \\ 9,577,504 \end{array}$ |
| Cost of materials used in manufacturing. . Value of factory shipments and other manuiacturing revenue. | $\begin{aligned} & 36,369,045 \\ & 58,089,700 \end{aligned}$ | $38,405,020$ $59,912,851$ | $\begin{aligned} & 39,661,314 \\ & 62,535,712 \end{aligned}$ |
| Total revenue. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 61.114,712 | 61,946,676 | 64,514,747 |

## Section 3.-Provincial and Territorial Fur Resource Management

Most of the fur resources of the provinces and territories of Canada are under the administration of the respective governments and councils. Exceptions include those resources within the boundaries of the National Parks and the Indian reserves, which are under the administration of the Federal Government. The Canadian Wildlife Service of the Department of Indian Affairs and Northern Development is responsible for all Federal Government interesta in wildlife resources except for those related to Indian affairs, which
are administered by the Indian Affairs Branch of the same Department. The Canadian Wildlife Service co-operates with provincial governments and other agencies concerned and handles federal interests in relevant national and international problems (see pp. 49-51). Provincial fur resource management practices are discussed in the following paragraphs.

Newfoundland.-For the past several years, the Wildlife Division of the provincial Department of Mines, Agriculture and Resources has been operating experimental beaver traplines on the Avalon and Burin Peninsulas. Legislation has now been prepared to permit the extension of this trapline system to cover all fur bearers throughout the Island of Newfoundland for the 1966-67 and subsequent trapping seasons. In general, trapping regulations provide for fall and winter trapping seasons for muskrat, otter, beaver and mink within the Island of Newfoundland and for beaver, mink, marten, muskrat, otter, fisher and Arctic fox in Labrador. Trapping is permitted throughout the year for fox, lynx, weasel, wolf and wolverine.

Although not directly connected with fur bearer management, interesting findings regarding one fur bearer-the lynx- have been made in Newfoundland. In 1964, during an investigation of caribou calf mortality, it was determined that when a caribou calf was bitten by a lynx, saliva bacteria were transmitted to the wound and the ensuing infection caused death in most cases. To eliminate this cause of death among young caribou, Wildlife Division officers have since carried out extensive Iynx trapping in the vicinity of the caribou calving areas, resulting in a higher percentage of calf survival.

Nova Scotia.-Nova Scotia's wild fur bearers include beaver, muskrat, mink, otter, fox, raccoon and weasel and the trapping of these animals provides supplementary income for several thousand persons who harvest from $\$ 100,000$ to $\$ 200,000$ worth of wild furs each year. The value, of course, depends on the numbers of each fur species available and on fur prices, both being subject to marked variations from year to year.

The beaver, once almost extinct in the province, is now the moat valuable fur bearer taken. A $\$ 2$ licence is required by residents to trap a limited number of beavers (five to ten) during the approximately six-week season beginning Nov. 1. No licence is required to trap other fur bearers, although a royalty must be paid to the province for each pelt exported. These animals may be taken between Nov. 1 and Dec. 14.

Beaver research is at present being carried on in Nova Scotia to increase knowledge of this valuable animal as a preparation for better management of its population. Behaviour, feeding, movement and reproduction studies are being conducted near the Tobeatic Sanctuary in western Nova Scotia, in Cumberland County in the eastern part of the province and in an enclosed area in Queens County. In addition, data on size, age, parasites and diseases are collected from beaver carcasses taken by trappers in all parts of the province.

Several trappers' associations have been started throughout the province so that the men closest to the fur resource may have some say in its wise use and management. These groups can also assist in ensuring proper handling and marketing of the raw furs and in up-grading quality, thus commanding good market prices.

New Brunswick. -The initial investigation under the fur management program under way in New Brunswick concerned the muskrat and was conducted in the estuary of the St. Jobn River, one of the better muskrat areas in the province. Such investigation will soon be extended to other fur bearers, especially beaver. Beaver were protected against trapping for about 20 years until the first open season was declared in 1946. As a result, the beaver has made a remarkable recovery and there has been an open season each year since 1951, the annual take averaging about 7,500 pelts. At present, beaver damage done to farms and woodiots, highways and railways is causing some concern.

The trapping of fisher and marten was permitted during the 1964-65 trapping season for the first time since 1946. These animals are found mainly in the northern part of the province but their numbers appear to be increasing and they are gradually working their
way southward. During the late winter of 1966, a number of fisher were live-trapped in northern New Brunswick and released in the Fundy Mountains in an attempt to reestablish them there. Mink and otter are not abundant but in the fall trapping season the catches average from 1,500 to 2,000 and from 200 to 250 , respectively. In 1964-65, 3,320 trapping licences were issued.

Provincial legislation enables quick changes to be made in trapping seasons; thus, the autumn benefit of available fur may be utilized by a trapper or a closed season established on any fur bearer showing signs of serious depletion in numbers. A summary of trapping laws, which includes information on how the different pelts should be handled to receive the best price, is available from the Fish and Wildlife Branch of the provincial Department of Lands and Mines.

Quebec.-The fur trade has been of considerable importance in Quebec since the beginning of New France and the province has remained in the forefront of fur producers. The principal native species, in order of importance, are beaver, mink, muskrat, hair-seal, otter, lynx and marten.

Management of wild fur bearers began in 1932 with the establishment by an official of the Hudson's Bay Company of a privately leased reserve at Rupert House. The administration of this reserve passed to the Hudson's Bay Company and a second concession, at Nottoway, was granted to the Company in 1938. Strict conservation practices were enforced in these two reserves with such success that the provincial government took over their management and has since added steadily to the area of Crown lands set aside for Indian trappers. At present, 12 reserves are under conservation: Rupert House, 7,500 sq. miles (1932); Nottoway, 11,300 sq. miles (1938); Vieux Comptoir, $30,000 \mathrm{sq}$. miles (1941); Peribonca, 12,600 sq. miles (1941); Fort George, 17,700 sq. miles (1942); Abitibi, 6,000 sq. miles (1943); Great Victoria Lake, $6,300 \mathrm{sq}$. miles (1948); Mistassini, $50,000 \mathrm{sq}$. miles (1948); Manouane, $5,000 \mathrm{sq}$. miles ( 1951 ); Roberval, 20,000 sq. miles (1951); Bersimis, $21,000 \mathrm{sq}$. miles ( 1951 ); and Saguenay, $140,000 \mathrm{sq}$. miles ( 1955 ). The number of beaver pelts alone taken from these reserves in the year ended Mar. 31, 1965 was 16,065, having a value of $\$ 212,201$.

In 1945, a separate system of registered lands for white trappers was set up in the areas of Abitibi East, Abitibi West, Rouyn-Noranda, Témiscamingue, Pontiac and part of Saguenay County. Each leaseholder is granted exclusive trapping rights on his assigned land and each is subject to strict regulation. The trapping of fur bearers, other than beaver, is not restricted on either the reserves or the registered lands except for a general regulation concerning the protection of animals and the fixing of catch limits. Recently, biological research has been undertaken to assess the results of this system.

In 1964-65, the value of the catch of wild furs in Quebec amounted to $\mathbf{\$ 2 , 5 6 9 , 4 7 1 - a}$ fraction of the value of the finished product.

Ontario.-Legislation for the management of wild fur bearers had its beginning in Ontario with the setting of seasons in 1860 by an Act of Upper Canada. However, 32 years passed before there was any field staff to enforce the regulations and then began an era of restrictive legislation to protect species threatened by the earlier exploitation. Progress beyond the restrictive enforcement of open and closed seasons bas come about only in the past 20 or 30 years. The first steps in this direction involved the setting aside of special Indian bunting areas in which non-Indians were not allowed to trap.

The registered trapline system was introduced in 1935 on a very small scale. This system is based on government recognition of the desirability of full utilization of the resource and the more efficient management that resulta when one individual enjoys the exclusive right to trap on such an area. In its early stages, surveyed townships were assigued as trapline areas but more explicit trapline boundaries, established in 1947-48, now cover the province and mostly follow natural physiographical features. At the same time, resident traplines were established in areas of patented land, which means most of southern

Ontario; these are blocks of land on which trappers are licensed to trap, providing they make their own written agreements with the landowners. Trapline licences are renewable annually as long as the trapper meets the conditions of the regulations and continues to trap. Trappers may sell the equipment and improvements they have made on their lines and so have a vested interest in their traplines.

In full realization that fur is a natural resource that cannot in nature be stockpiled, and is harvested on a commercial basis only, the Ontario Department of Lands and Forests has assisted the Ontario Trappers' Association to establish their fur auction at North Bay. This allows the trappers to sell furs on a competitive market and realize their full value.

Much valuable research has been carried out on fur bearers, with present emphasis on beaver and otter. Transplantings have been successfully carried out to speed the recovery of reduced populations, particularly with beaver. A new aging technique was perfected for beaver in 1964 and an aerial beaver survey technique was developed recently.

Manitoba.-Trading in furs is Manitoba's oldest industry and the province produces some of the finest pelts on the world markets. The annual value of production varies widely, depending both on the cyclic abundance of fur bearing animals and on world prices for the pelts produced.

As the northern portion of Manitoba became more accessible following construction of the Hudson Bay Railway to Churchill, competition for fur and for trapping grounds became so severe that the fur resources were sadly depleted. In 1940, Manitoba started a program of trapline registration. The program provided security of tenure to individuals or community groups of trappers, weeded out the part-time trappers and changed harvesting of wild fur from fur mining to wild fur farming. At that time beaver were a rarity and a series of closed seasons had been declared. Since then, beaver have increased steadily and 41,869 pelts were harvested in the 1964-65 season. Within the past decade new records in the production of muskrat, beaver, mink, lynx, fisher and otter have been set for this century.

The wild fur industry is still of economic importance in the province, and particularly so for northern residents, both white and native. A program of trapper education, inaugurated in 1957 and designed to improve the general handling of furs by trappers and at the same time achieve a certain measure of standardization in pelt care, has shown gratifying results. It has been expanded to include improved trapping methods and the use of humane trap sets; a booklet, The Trapper's Guide, is available from the Wildlife Branch of the Department of Mines and Natural Resources.

Manitoba has been working in close co-operation with federal and other provincial agencies in the promotion of quality furs by contributing a collection of representative wild furs for exhibit at the more important European fairs.

Saskatchewan.-Before the introduction of Saskatchewan's fur conservation and development program, little was done to control the trapping of beaver and muskrat. During open seasons, trappers took every pelt available and then the season had to be closed the following year in hope of natural population build-up. This "feast and famine" policy had a disastrous effect on both the fur resources and the livelihood of trappers. Few trappers had exclusive rights to specific areas and most of them were unable to establish permanent homes in communities. Poaching was common practice and there was little economic security. Beaver began declining steadily after World War I and this affected the habitat for other fur bearers as well.

In 1944, the Saskatchewan Government set up a committee to study trapping problems and the following year the South Saskatchewan Muskrat Trapping Program was instituted. Under this plan, individuals received exclusive rights to trap on definite land locations. Owners and occupants received first consideration, with special priority given to Indians and metis on Crown lands. Muskrat quotas were established to assure continuing populations, and marketing of pelts under government supervision was instituted.

In 1946, under federal-provincial agreement, all Crown lands north of the 53rd parallel were set up as the Northern Fur Conservation Block. Up to $\$ 50,000$ a year was to be expended over the following ten years to establish and administer conservation areas, purchase equipment, pay salaries of personnel, transplant live beaver and build dams; the Federal Government agreed to assume 60 p.c. of the cost and the province the remainder. A Fur Advisory Committee, with representation from the provincial Department of Natural Resources and the federal Indian Affairs Branch was set up to supervise the program. Organization of conservation areas was left to the trappers. Five-man councils were elected in all districts, with Indian, metis and white trappers sharing privileges, obligations and responsibilities on an equal basis. Conservation measures and licensing regulations were initiated. In 1956 the agreement was extended for another ten years with minor changes and in 1962 a co-ordinating body was set up by the Fur Advisory Committee to promote better communications and understanding of the fur program. The second federal-provincial agreement terminates in 1966 and negotiations are under way for the drafting of a new agreement which will provide, in addition to an extended fur program, a greatly enlarged plan covering the development of other natural resources, such as fish, forest development on Indian reservations, harvesting of wild rice and other natural crops, etc.

Under the present fur program, security of trappers has been strengthened; fur bearer population, although still fluctuating to some extent, has through management reached a higher general level, particularly of beaver which is the most important fur animal, rivalled only by wild mink; quotas have put trapping on a sustained-yield basis; poaching has been almost eliminated; higher water levels resulting from the comeback of beaver have improved the habitat for other wildlife; and Indian and non-Indian trappers are sharing alike in the self-government of trapping areas and in fur management programs.

Alberta.-During 1965-66, plans have been formulated for the reorganization of the Fish and Wildlife Division of the provincial Department of Lands and Forests. Under the new set-up, a fur management section will be established to work strictly on the fur resources of the province. More meetings will be held with registered trappers to increase the exchange of information between them and the Division's officers and a more intensive program is being initiated to eliminate as far as possible the misuse of trapping areas by certain trappers and, by amalgamation, to form trapping areas into better economic units. The Alberta Government submits pelts to the main fur exhibits in Canada and Europe, a policy that has increased the interest of foreign and Canadian buyers in Alberta furs.

British Columbia.-The British Columbia wild fur resource is administered by the Fish and Wildlife Branch of the Department of Recreation and Conservation. Regulations are derived under authority of the Wildlife Act and resource use is controlled under the registered trapline system, in effect since 1926. Registered traplines are areas of Crown land allotted, for the purpose of trapping wild fur, to trappers who are resident in the province. Registration of a specific trapline is renewable on an annual basis by the trapper, subject to certain requirements of tenure aimed at conservation and sustained yield of fur species. Approximately 3,000 trappers are involved in provincial wild fur production, of whom one half are Indians.

The market value of wild fur produced during the fur harvest of 1964-65 was $\$ 600,316$, with beaver, squirrel, wild mink and lynx together comprising 78 p.c. of this total value. The 1964-65 beaver harvest numbered 21,769 pelts.

Legislative measures entail a general shortening of the annual trapping season to restrict the harvesting of unseasonable pelts. Administrative emphasis is placed on the desirability of increasing the market value of the resource through improved pelt quality. The Branch is a member of the Canadian Fur CounciI.

## CHAPTER XV.--ELECTRIC POWER*

## CONSPECTUS

|  | Page |  | $\mathrm{Page}^{\text {a }}$ |
| :---: | :---: | :---: | :---: |
| Section 1. Electric Power Development. | 634 | Section 2. Progregb in Conetridction |  |
| Subsection 1. Historical and Current'Trends |  | Generating Factitieg, 1965... ... | 644 |
| in Power Development. . . . . . . . . . | 634 | Sbetion 3. Pownr Generating Capability |  |
| Subsection 2. Utilization of Power | 637 | and Load Requtrements. | 648 |
| Subsection 3. Water Power Resourcea, |  | Section 4. Electric Power Statigtics. | 651 |
| Undeveloped and Developed....... .. | 638 | Section 5. Public Ownerghip and Regu- |  |
| Subsection 4. Thermal Power Generation.. | 642 | lation of Electrical Utilities. | 655 |

The interpretation of the symbols used in the tables throughout the Year Book will be found on $p$. viii of this volume.

## Section 1.-Electric Power Development

## Subsection 1.-Historical and Current Trends in Power Development

Electric power development in Canada has undergone remarkable and sustained growth since the beginning of the century. From a modest 133,000 kilowatts of generating capacity installed at the end of 1900, Canada's installed hydro capacity rose to almost $21,800,000 \mathrm{kw}$. by the end of 1965 , and thermal capacity to $7,600,000 \mathrm{kw}$.

The chart opposite shows the expansion in installed generating capacity in hydro and thermal stations that has taken place since 1920. Thermal-electric power development in Canada was not well documented early in the century but it is apparent that its growth was slow and of relatively minor importance until the late 1940s. The rate of development of hydro facilities, on the other hand, tended to accelerate after the turn of the century when improvements in electric power transmission techniques were introduced and increasing emphasis began to be placed on the construction of large hydro-electric stations.

During the prosperous 1920 s, demand for electricity became heavier and the rate of installation increased appreciably. Then, under the depressed conditions of the early 1930s power demand dropped off but did not show up immediately as a drop in the installation rate because of the time lag inherent in hydro-electric power development. The completion of hydro projects initiated prior to the depression period accounted for the continuation of a high rate of capacity installation up until 1935; thereafter, poor economic conditions in the 1935-39 period resulted in a reduced rate.

In the early war years, the tremendous demand for power to drive Canada's war industries accounted for the sharp rise in installation of new generating facilities between 1940 and 1943 but in the later war years construction dropped off so that, from 1944 to 1947, a second flattening occurred in the growth curve. After the War, industrial expansion and rapidly growing residential and agricultural development placed extremely heavy demands on power generating facilities, to stay abreast of which the addition of new capacity was required at a rate higher than at any time in Canada's history. These demands also led to the start of an extensive program of thermal plant construction in the early 1950 s, since they could not be satisfied from hydro sources alone. In the period

[^199]

1950-65, the average annual rate of installation of both hydro and thermal facilities was about $1,200,000 \mathrm{kw}$., with hydro contributing two kilowatts of new capacity for each kilowatt contributed by thermal. However, it is interesting to note that the average increase in thermal generating capacity over the period 1960-65 equalled the increase in hydro capacity and promises to surpass it in the not too distant future.

Table 1 shows the present status of installed generating capacity in hydro and thermal stations and the combined total for all stations in Canada as at Jan. 1, 1966.

## 1.-Installed Hydro- and Thermal-Electric Generating Capacity, by Province, as at Jan. 1, 1966

| Province or Territory | Hydro | Thermal | Total |
| :---: | :---: | :---: | :---: |
|  | kw. | kw. | kw. |
| Newfoundland. | 466,000 | 75,000 | 541,000 |
| Prince Edward Lsland. |  | 58,000 | 58,000 |
| Nova Scotia. | 143,000 | 489,000 | 632,000 |
| New Brunswick | 262,000 | 320,000 | 582,000 |
| Quebec. | 10,339,000 | 447,000 | 10,786.000 |
| Ontario.. | 6,064,000 | 3,217,000 | 9,281,000 |
| Manitoba. | 1,074,000 | 339,400 | 1,413.000 |
| Saskatehewan. | 320.000 | 648,000 | 968,000 |
| Alberta. | 445,000 | 959,000 | 1, 404,000 |
| British Columbia. | 2,616,000 | 1,020,000 | 3,636, 000 |
| Yukon Territory, | 28,000 | 4,000 | 32,000 |
| Northwest Territories. | 35,000 | 26,000 | 61,000 |
| Canada | 21,792,000 | 7,002,000 | 24,394,000 |

Current Trends.-Although water power traditionally has been and still is the main source of electric energy in Canada, thermal sources some day will undoubtedly become the main supplier. The choice between development of a hydro-electric power site and construction of a thermal generating station must take into account a number of complex considerations, the most important of which are economic in nature. In the case of a hydro-electric project, the heavy capital costs involved in construction are offset by maintenance and operating costs considerably lower than those for a thermal plant. The long life of a hydro plant and the dependability and flexibility of operation in meeting varying loads are added advantages. Also important is the fact that water is a renewable resource. The thermal station, on the other hand, can be located close to the demand area, with a consequent saving in transmission costs. With the current trend to large steam stations, however, a certain amount of the flexibility of location of thermal stations is lost because large steam units require considerable quantities of water for cooling purposes, making it essential that such stations be sited close to an adequate water supply

The marked trend to thermal development which became apparent in the 1950s can be explained in part by the fact that, by that time, in many parts of Canada most of the hydro-electric sites within economic transmission distance of load centres had been developed and planners had to turn to other sources of electric energy. More recently, however, advances in extra-high-voltage transmission techniques are providing a renewed impetus to the development of hydro power sites previously considered too remote.

Because of the relatively long starting-up time required by large thermal units, thermal stations tend to lack flexibility of operation and can be used most efficiently to meet continuous load conditions. Hydro stations, on the other hand, can put generating units on the line with minimum delay and hence are admirably suited to supply power to meet the peak loads which may occur several times each day. By combining the advantages of both hydro and thermal stations in integrated supply systems, power producers are now achieving much greater flexibility of operation.

Another trend in development designed to meet the problem of varying daily loads is the use of pumped storage. An example is the Sir Adam Beck hydro development at Niagara Falls where water taken from the Niagara River above the Falls is carried by
tunnel and power canal to penstocks which supply the main generating station on the bank of the Niagara River some distance below the Falls. In off-peak hours, power from the main station is used to pump water from the power canal into a reservoir maintained at a higher level; during peak-load hours, the pumps, which are dual-purpose units, operate as generators and are driven by water released from the reservoir. The pumping-generating units at this development make available an extra $176,700 \mathrm{kw}$. of generating capacity. A pumping-generating station using the same general principle is under construction on the Brazeau River in Alberta as part of the $338,440-\mathrm{kw}$. Big Bend hydro development.

Perhaps the most promising application of the pumping-generating principle is its use in conjunction with nuclear power stations. Nuclear units, in common with the larger conventional thermal units, can be used most efficiently under conditions of continuous operation. Off-peak nuclear power can be used to operate pump-turbine units and the hydro-electric power derived from operating the units as generators is available for use during periods of peak demand.

## Subsection 2.-Utilization of Power

In 1965, Canada's generating facilities produced a total of $143,160,958,000$ kilowatthours of electric energy, after allowing for the energy used in the power stations themselves. Of this total, $116,712,297,000 \mathrm{kwh}$. was produced in hydro-electric stations and $26,448,661,000 \mathrm{kwh}$. in thermal stations. Energy imported from the United States exceeded by $7,407,000 \mathrm{kwh}$. the energy exported to the United States during the year, bringing to $143,168,365,000 \mathrm{kwh}$. the total energy made available. The diagram illustrates how this energy was used.

Industry uses approximately 57 p.c. of the total electric energy made available in Canada; residential and farm use accounts for 20 p.c. and commercial use 14 p.c. The remaining 9 p.c. is listed under "losses and unaccounted for" Because many power producers do not distinguish in their records between residential and farm customers, the amount of energy used is shown as a combined total. A small amount of energy used for street lighting, slightly less than 1 p.c. of the total energy made available, is included in the "commercial" category.

About 20 p.c. of the total energy made available in Canada is used in the mineral industry, including smelting and refining, 18 p.c. by the pulp
 and paper industry and 19 p.c. by other industries. Of the latter, the chemical industry and the primary iron and steel industry together consume almost one half. Approximately 75 p.c. of the energy consumed by the mineral industry is used in the smelting and refining of metals.

Canada has no known deposits of bauxite but the availability of low-cost hydroelectric power has fostered the establishment of an aluminum industry which produces one quarter of the world's supply of this metal. Further evidence of the value of water power to mining operations is provided by the fact that Canada's asbestos industry, which produces about 40 p.c. of the total world supply of asbestos, obtains the major part of its power supply from hydro-electric sources.

The incidence of large water power resources in those regions in which the more important mineral deposits have been found has greatly facilitated mining development. Recent examples are the nickel mining and refining complex at Thompson, Man., which uses hydro power generated in the Kelsey plant on the Nelson River, and the iron ore mining operations in Labrador, supplied by the Twin Falls plant on the Unknown River.

Metal mining, a very important division of the Canadian mining industry, is carried on mainly in two physiographic regions, the Western Cordillera and the Canadian Shield. In the Western Cordillera, the mountainous topography and the relatively high amounts of precipitation favour the development of water power. In the Canadian Shield, which is a Precambrian formation stretching in a wide sweep around Hudson Bay from the Mackenzie River basin to the eastern tip of Labrador, heavy glaciation in recent geological times has formed river systems which are comparatively young and are characterized by large numbers of lakes connected by short river sections with numerous rapids and falls suitable for the development of hydro-electric power.

Canada's pulp and paper industry is one of the world's great industrial enterprises. Total mill capacity for the production of newsprint paper is considerably greater than that of any other country in the world and in total production of wood pulp, Canada is second only to the United States. The fact that over 90 p.c. of the manufactured newsprint is exported gives some indication of the importance of the industry to the Canadian economy. By far the larger portion of the energy used in the pulp and paper industry is derived from water power.

## Subsection 3.-Water Power Resources, Undeveloped and Developed

Table 2 presents a summary of developed water power in Canada and an estimate of undeveloped water power potential, based on records maintained by the Water Resources Branch of the Department of Energy, Mines and Resources. Estimates of available power are shown for undeveloped sites only; for developed sites, the total generating capacity actually installed is indicated. It should be noted that the capacity installed at an existing hydro-electric development is frequently in excess of the continuous power svailable at the site. The relationship between installation and available power is explained on p. 639.
2.-Water Power Resources, by Province, as at Jan. 1, 1968


Undeveloped Water Power Resources.-Table 2 gives estimates of undeveloped power based on different rates of flow: the first column indicates continuous power ordinarily available during periods of low discharge under existing conditions of river flow based on Q95, which is the natural or modified flow available 95 p.c. of the time; the second column shows dependable maximum power based on Q50, which is the natural or modified flow available for at least 50 p.c. of the time; and the third column shows dependable maximum power based on Qm, the arithmetical mean flow. On rivers for which flow records are sparse or non-existent, estimates of flow are made from available information relating to run-off in the same general area. The hydraulic head used in calculating undeveloped water power is based on the actual drop or the feasible concentration of head which has been measured or carefully estimated. Preliminary figures for Quebec supplied by the provincial Department of Natural Resources, however, reflect the net river power potential which would result from development of the entire head available on Quebec rivers.

It should be emphasized that the figures of the first two columns represent only the minimum water power possibilities in Canada for the reason that the estimates are based upon existing river flow and, for the most part, do not reflect the benefita of streamflow regulation that would result from the development of storage potential. On the other band, the arithmetical mean flow figures represent the power that would be obtainable if the entire flow in the river could be regulated to provide a continuous flow of constant magnitude. It can readily be seen that, because the latter condition assumes complete regulation, estimates of potential based upon arithmetical mean flow will, if other pertinent factors are neglected, exceed the amount of capacity that might be expected to be installed at the site, particularly where little or no storage is available. However, recent experience in the development of water power sites has indicated that, in fact, the generating capacities installed at many sites are very considerably in excess of what might be dictated by even the arithmetical mean flow. Several major river-diversion possibilities exist, particularly in British Columbia. For this reason, the estimates of potential of British Columbia's undeveloped hydro resources have recently been boosted substantially, mainly because of the inclusion of figures based upon the diversion of rivers which, if they are developed at all, will almost certainly be developed on a combined-river basis.

Developed Water Power Resources.-The figures of installed generating capacity given in Table 2 are based on the manufacturer's rating in kilowatts as shown on the generator name-plate, or derived from the rating where it is indicated in kilovolt-amperes. The maximum economic installation at a power site can be determined only by careful consideration of all the conditions and circumstances pertinent to its individual development. It is usual practice, however, to install units having a combined capacity in excess of the available continuous power at Q50, and frequently in excess of the power available at Qm. There are a number of reasons for this. The excess capacity may be installed for use at peak-load periods, to take advantage of periods of high flow, or to facilitate plant or system maintenance. In some instances, storage dams have been built subsequent to initial development to smooth out fluctuations in river flows. In other cases, deficiencies in power output during periods of low flow have been offset by auxiliary power supplied from thermal plants, or by inter-connection with other plants which operate under different load conditions or are located on rivers with different flow characteristics.

Thus, the extent to which the installed capacity exceeds the available continuous power at the various rates of flow is dependent upon the factors that govern the system of plant operation, and varies widely in different areas of the country. In some developments, the difference may amount to several bundred per cent. For this reason, discretion should be used in comparing the figures in the last column with those in the preceding columns, as available continuous power and installed capacity are not directly comparable. As a rough guide, however, it may be assumed that the power equivalent of the flow at Q50 represents an approximate, if conservative, estimate of hydro generating capacity remaining to be installed in Canada.

Provincial and Territorial Distribution.-The provincial and territorial distribution of undeveloped water power resources and installed generating capacity, given in Table 2, reveals that substantial amounts of water power have been developed in all provinces except Prince Edward Island, where water power resources are meagre. As natural resource development proceeds, the fortunate incidence of water power in proximity to mineral, forest and other resources becomes increasingly apparent. There is little doubt that the existence of large amounts of potential hydro power on northern rivers will prove to be a factor of prime importance in the eventual realization of the natural wealth of Canada's Northland.

The water power resources of Newfoundland, determined on the basis of the limited available streamflow data, are estimated to be of very considerable magnitude. On the Island, although the length of the rivers is generally not great, topography and run-off are favourable for hydro-electric power development. Of the substantial capacity installed, a very large portion serves the pulp and paper industry. In Labrador, the Churchill River and its tributaries, for the most part undeveloped, constitute one of the largest potential sources of water power in Canada.

In Prince Edward Island there are no large streams and water power plants are limited in size to those used to operate small mills. The water power resources of Nova Scotia and New Brunswick, although small in comparison with those of other provinces, are a valuable source of energy and make a substantial contribution to the economies of the two provinces. Numerous rivers in both provinces provide moderate-sized power sites either within economic transmission distance of the principal cities and towns or advantageously situated for use in development of the timber and mineral resources. These provinces are also favoured with abundant indigenous coal supplies.

Quebec is the richest of all the provinces in water power resources, possessing approximately 45 p.c. of the total recorded for Canada. Quebec also leads in developed water power, its present installation of $10,339,000 \mathrm{kw}$. representing about 48 p.e. of the national total. The largest single hydro-electric installation in Canada is the Quebec HydroElectric Commission's $1,574,260-\mathrm{kw}$. Beauharnois development on the St. Lawrence River; also notable are the Commission's Bersimis I development on the Bersimis River having an installed capacity of $912,000 \mathrm{kw}$., and the Aluminum Company of Canada Limited's $742,500-\mathrm{kw}$ Chute des Passes plant on the Peribonca River. A major power project which represents a significant advance in the development of Quebec's hydro-electric resources is under construction. This project, involving the harnessing of the headwaters of the Manicouagan and Outardes Rivers, will permit the eventual installation of some $5,800,000$ kw . on the two rivers. Power production in the province is facilitated by the regulation of streamflow by the provincial Department of Natural Resources through the storage dams which it owns and operates. In 1965, some of the responsibility for regulation was transferred to the Quebec Hydro-Electric Commission.

Almost all of the sizable water power potential in Ontario within easy reach of demand centres has been developed and planners are looking to the more remote sites as new sources of supply. Improvements in long-distance transmission techniques have brought, many of these sites within the economic orbit of demand centres. Several sites are being developed and a number of others are under investigation. Most of the hydro-electric power produced in the province comes from the generators of The Hydro-Electric Power Commission of Ontario, Canada's largest power producing and distributing organization. Ontario's largest generating station is located on the Niagara River at Queenston, where the Sir Adam Beck-Niagara Generating Stations Nos. 1 and 2, and the associated pumpinggenerating station have a combined generating capacity of $1,804,200 \mathrm{kw}$. In addition to the power generated in its own plants, the Commission purchases large amounts of electric power generated outside the province, chiefly in Quebec.

Of the three Prairie Provinces, Manitoba, with immense hydro-electric capabilities on the Winnipeg, Churchill, Nelson and Saskatchewan Rivers, is the most generously endowed with water power resources. Until recently, hydro-electric generating stations
on the Winnipeg River supplied most of the power requirements of southern Manitoba. Manitoba Hydro's high-voltage, long-distance transmission lines, however, will carry ever-increasing amounts of power south from hydro-electric stations on northern rivers to help meet the province's constantly growing power demands. Large water power resources exist in the central and northern parts of Saskatchewan, principally on the Churchill, Fond du Lac, and Saskatchewan Rivers. In 1963, power from Squaw Rapids, the first hydro development on the Saskatchewan River, was fed into the transmission network of the provincially owned Saskatchewan Power Corporation, which serves the more settled areas of the province. These areas previously had been served by electric power from thermal plants fuelled by coal, oil or natural gas, the hydro-electric power generated in the province being used almost exclusively for mining purposes in northern areas. In Alberta, the principal hydro-electric developments are located on the Bow River and its tributaries and, from these developments, Calgary Power Ltd. serves most of the southern part of the province. In 1965, energy from a large hydro unit on the Brazeau River in the headwaters of the North Saskatchewan River came on line, augmenting the energy from the Bow River plants. Substantial water power resources are located in the northern regions and, although these are somewhat remote from present centres of population, the advent of extra-high-voltage transmission has enhanced the prospect of their development.

British Columbia has many mountain streams that offer abundant opportunity for the development of hydro-electric power. In terms of recorded available water power resources, developed and undeveloped, the province ranks second in Canada and is exceeded only by Quebec and Ontario in the amount of generating capacity installed. Notable for the magnitude of their power potential are such rivers as the Columbia, the Fraser, the Peace and the Stikine. Up to the present time, however, hydro-electric developments on smaller rivers in the southern areas have satisfied the major load requirements of the province but now the immense power resources of the Peace River are in process of being harnessed and by 1968 will supplement the energy supply. Development of the Columbia River, now well under way, is designed to provide initially three huge storage reservoirs and eventually to make available a significant amount of 'at site' power in the Canadian portion of the basin. The foremost producer and distributor of electric power in British Columbia is the provincially owned British Columbia Hydro and Power Authority

Power from present developments in the Yukon Territory and the Northwest Territories is used almost exclusively to satisfy the needs of local mines and adjacent settlements. Owing to the lack of developed native fuel sources and to transportation difficulties, water power is of special importance in the development of mining areas, such as Mayo in the Yukon Territory and Yellowknife in the Northwest Territories. In 1948, to encourage the development of the resources of Northern Canada, the Federal Government established what is now the Northern Canada Power Commission (see p. 150), to be responsible for the construction and management of public utility plants. In Yukon Territory, most of the resources are located on the Yukon River and its tributaries. The possibility exists of diverting the headwaters of the Yukon River through the Coast Mountains to utilize a high head near tidewater in northern British Columbia but such a development would affect adversely the potential of sites on the main river. Resources in the Northwest Territories have not been surveyed to the same extent as those in Yukon Territory but they are nevertheless known to be of considerable magnitude, particularly on rivers flowing into Great Slave Lake. Of major significance, as well, is the hydro-electric potential of the South Nahanni River, which drains to the Mackenzie River via the Liard River. On the basis of preliminary investigations, it is estimated that, with total regulation and complete use of the head susceptible of development, the hydro-electric potential of the South Nabanni River would be close to $1,000,000 \mathrm{kw}$. Indications are that the rivers draining the District of Keewatin, north of Manitoba, could also contribute materially to the total power potential of the Northwest Territories.

## Subsection 4.-Thermal Power Generation

The incidence of immense water power resources in Canada and the brisk pace of their development has tended to overshadow the very considerable contribution being made by thermal energy in the nation's power economy. At the end of 1965, the total installed thermal capacity in Canada was $7,602,000 \mathrm{kw}$., about 26 p.c. of the total electric generating capacity in the country. The fact that energy produced in thermal plants during the year accounted for only 18 p.c. of the total may be attributed in part to the fact that a considerable amount of the capacity installed is maintained for stand-by purposes. As stated earlier, however, the current emphasis on thermal plant construction is likely to continue and to become more marked as development of the nation's water power reserves becomes more complete.

Conventional Thermal Power.-Approximately 85 p.c. of all of the conventional thermal power generating equipment in Canada is driven by steam turbines. The magnitude of the loads being carried by ateam plants has led to the installation of steam units with capacities as high as $300,000 \mathrm{kw}$. Even larger units, of $500,000-\mathrm{kw}$. capacity, will go into service within the next three or four years. The remainder of the load is carried by gas turbine and internal combustion equipment. The flexibility of internal combustion engines makes this type of equipment particularly suitable for meeting power loads in smaller centres, especially in the more isolated areas.

Table 1 (p. 636) shows that the Provinces of Prince Edward Island, Nova Scotia, Saskatchewan and Alberta depend upon thermal capacity for most of their power requirementa and that New Brunswick has slightly more thermal than hydro. For Ontario, where the present hydro capacity is about twice the thermal, forecasts based on present construction schedules indicate that by the early 19708 the province's total installed thermal capacity will have overtaken hydro.

With the exception of several sizable plants in St. John's and Grand Falls, most of the thermal-electric capacity in Newfoundland is made up of relatively small units used to supply power to small, often isolated communities. With the wealih of water power readily available in the province, it is not likely that Newfoundland will experience the need for large thermal stations for some time to come. Prince Edward Island depends almost exclusively on thermal sources for its power supply and almost all of the province's generating capacity is oil-fuelled. In Nova Scotia, most of the energy generated in thermalelectric utility plants is derived from coal, with a smaller amount from petroleum fuels, and in New Brunswick petroleum fuels provide slightly more than half of the thermalelectric energy.

The abundance of Quebec's water power wealth, much of it within economic transmission distance of existing demand areas, has so far limited the application of thermal power to specific local use. However, the growing emphasis on thermal power in other parts of Canada is also beginning to be apparent in Quebec, where thermal capacity will serve not only to help guarantee an adequate power supply in the face of increasingly heavy demands but also to render the almost exclusively hydro-electric base more flexible through integrated operation. The second unit of a large thermal plant went into operation at Tracy near Sorel in 1965 and a second large plant is planned for service in the Gaspe region by 1970 .

Ontario has more thermal capacity than any other province in Canada; capacity installed in the province at the end of 1965 totalled $3,217,000 \mathrm{kw}$., which was about 42 p.c. of the national total. With another $3,200,000 \mathrm{kw}$. of conventional thermal capacity and $1,400,000$ kw. of nuclear thermal capacity scheduled for service in the period 1966-71, Ontario's share of the national total promises to increase considerably. The country's largest thermal stations are Ontario Hydro's Richard L. Hearn and Lakeview generating stations at Toronto, each with a capacity of $1,200,000 \mathrm{kw}$. Four $300,000-\mathrm{kw}$. units, the largest in operation in Canada, make up the capacity at the Lakeview station, scheduled for expansion
to $2,400,000 \mathrm{kw}$. by 1968 . Four even larger units of $500,000-\mathrm{kw}$. capacity are planned for the Lambton station near Sarnia, installation of which will be completed by 1971.

Manitoba supplements its predominantly hydro-based power supply with a substantial amount of thermal capacity but current emphasis is on development of water power resources. Saskatchewan, until recently, has relied on thermal capacity to satisfy the needs of the more settled areas and hydro-electric power generated in the province has been used almost exclusively for mining purposes in the northern areas. In the past few years, however, development of storage on the South Saskatchewan River has made hydro-electric power available in the southern part of the province and plans for expanding the province's thermal capacity are limited for the present to a proposed extension to the $132,000 \mathrm{kw}$. Boundary Dam thermal station. The incidence of vast fuel resources accounts for the emphasis on thermal power generation in Alberta; the province's largest thermal plants are the $330,000-\mathrm{kw}$. gas turbine and steam station at Edmonton and the $282,000-\mathrm{kw}$. Wabamun steam station.

More than half of British Columbia's thermal generating capacity is installed in three plants located in the Vancouver area. The capacity of the largest of these plants, the $450,000-\mathrm{kw}$. Burrard generating station, is expected to be increased to $600,000 \mathrm{kw}$. by 1967 .

Until 1965, most of the power requirements of the Northwest Territories were satisfied from thermal sources but the commissioning of the Twin Gorges hydro station on the Taltson River in 1965 has altered the balance in favour of hydro. In Yukon Territory, hydro is the larger contributor. Most of the thermal-electric energy in the Territories is generated by small diesel units.

Nuclear Thermal Power.-Commercial electric power generated from the heat of nuclear reaction became a reality in Canada in 1962 when the $20,000-\mathrm{kw}$ Nuclear Power Demonstration station at Rolphton, Ont., fed power for the first time into a distribution system in Ontario. The NPD station is the forerunner in a series of large nuclear stations that will shoulder more and more of Canada's rapidiy growing power loads.

Research into reactor design and the application of nuclear energy in the electric power field are among the more important responsibilities of Atomic Energy of Canada Limited, a Crown company incorporated in 1952 (see also pp. 391-396). AECL has concentrated its efforts on the development of the CANDU reactor, which uses natural uranium as a fuel and heavy water as the moderator. By using heavy water as the moderator, a high energy yield can be obtained from natural uranium and, since natural uranium is a low-cost nuelear fuel, the cost of fuel is a minor component in the cost of producing power. Natural uranium has the added attraction of being available in commercial quantities in Canada.

The Canadian nuclear power reactor also offers the simplest of nuclear fuel cycles. Sufficient energy can be extracted from the fuel so that the economics of the system do not require a value to be placed on the spent fuel. There is, therefore, no need to carry out costly chemical processing of the spent fuel unless the worth of the remaining contained fissile material becomes sufficiently high to make chemical processing an economic proposition. The spent fuel is an ideal package for simple underwater storage and no large volume of highly radioactive liquids from a chemical processing plant has to be handled and contained.

The NPD station has been used extensively to demonstrate the ability of the system to operate at a high capacity factor and to determine the nature and predictability of outages. Fuel changes while the system is in operation have become routine and a considerable amount of research into the sources of heavy water losses has been carried out. As a result of this research, losses have been cut considerably and the NPD station is demonstrating that a very acceptable heavy water loss rate is attainable.

At Douglas Point on the shore of Lake Huron, the country's first full-scale nuclear power station will begin commercial production at the end of 1966. The station, built with the co-operation of Ontario Hydro, houses a $200,000-\mathrm{kw}$. CANDU reactor. Experience
gained in the design and operation of this reactor has encouraged the development of even larger units and plans have been announced for the construction of the two-unit, $1,080,000-$ kw. Pickering nuclear station to be built near Toronto, with in-service dates for the two units scheduled for 1970 and 1971.

## Section 2.-Progress in Construction of Generating Facilities, 1965

During 1965 Canada's electric power generating capacity increased by the massive total of $2,242,000 \mathrm{kw}$. Hydro capacity accounted for $1,434,000 \mathrm{kw}$. and thermal for the remaining $808,000 \mathrm{kw}$. With the exception of 1959 , when nearly $2,500,000 \mathrm{kw}$. of new capacity went into service, the 1965 increase was the highest ever recorded in a single year and almost tripled the 1964 total of $754,000 \mathrm{kw}$. The new capacity that began service in 1965 boosted the nation's total installed generating capacity to $29,400,000 \mathrm{kw} ., 21,800,000$ kw of which was hydro and the remaining $7,600,000 \mathrm{kw}$. thermal. On the basis of present estimates, almost $1,800,000 \mathrm{kw}$. of new generating capacity will go into service in 1966, $883,000 \mathrm{kw}$. of this in hydro plants and $875,000 \mathrm{kw}$. in thermal stations. Including the new capacity scheduled for 1966, Canada's power producers have under construction or have scheduled a total of $16,500,000 \mathrm{kw}$. which will come into service within the next few years, of which hydro capacity will account for $9,700,000 \mathrm{kw}$. and thermal the remaining $6,800,000 \mathrm{kw}$. These estimates, however, do not include the vast water power potential that may eventually be developed on the Churchill River in Labrador, the Nelson River in Manitoba or the Columbia River in British Columbia.

Atlantic Provinces.-In Newfoundland, the Bay d'Espoir hydro site under development by the Newfoundland and Labrador Power Commission is designed for six units, three of which are scheduled for service in March 1967; total eventual generating capacity at Bay d'Espoir is expected to be $459,000 \mathrm{kw}$. In 1965 , the Commission built 11 small thermal plants with capacities ranging from 80 kw . to 300 kw ., adding $1,900 \mathrm{kw}$. to the province's thermal capacity. The new $12,500-\mathrm{kw}$. gas turbine plant being built by the Commission at Holyrood is expected to be in service in September 1966. Development of the immense hydro potential of Churchill Falls on the Churchill River in Labrador awaits completion of marketing negotiations. For full development of the 1,040 -foot fall, Churchill Falls Power Corporation Limited proposes an installation of ten units with a total generating capacity of $3,91+, 000 \mathrm{kw}$.

In Nova Scotia, the Nova Scotia Light and Power Company Limited steam plant at Tuft's Cove began operation in 1965 with one $100,000-\mathrm{kw}$. unit, the first in a multi-unit development that may eventually provide more than $500,000 \mathrm{kw}$. of generating capacity. The Company has under consideration the development of two sites expected to yield a combined total of $16,200 \mathrm{kw}$. of hydro capacity-at Lequille ( $11,200 \mathrm{kw}$.) on the Allain (Lequille) River and at Alpena ( $5,000 \mathrm{kw}$.) on the Nictaux River. Capacity of the Nova Scotia Power Commission's hydro plant at Weymouth Falls on the Sissiboo River will be more than doubled by the addition of a $10,400-\mathrm{kw}$. unit in November 1967, bringing the plant capacity to 19.400 kw . Two hydro sites are being considered for development by the Commission-Wreck Cove on Wreck Cove Brook is proposed for development to a capacity of $67,500 \mathrm{kw}$. and Riverdale on the Sissiboo River to a capacity of $6,000 \mathrm{kw}$.; neither development has yet been scheduled. Electric power and steam supply for the Glace Bay heavy-water plant will be supplied from the Seaboard Power Corporation Glace Bay thermal station. To take care of the additional load, the Glace Bay station has been extended to house a new $38,000 \mathrm{kw}$. steam unit. A new single-unit thermal plant with a generating capacity of $3,750 \mathrm{kw}$. was put into operation at Dartmouth by Imperial Oil Limited.

In New Brunswick, the new Sisson hydro plant built by New Brunswick Electric Power Commission on the Tobique River was commissioned in 1965; its capacity is 10,000
kw. in one unit. Development of the Mactaquac site on the St. John River was proceeding on schedule and the first three $100,000-\mathrm{kw}$. units should be in operation early in 1968; Mactaquac is designed for six $100,000-\mathrm{kw}$. units, all of which will be in service by 1976. The Commission increased the capacity of its Courtenay Bay steam plant at East Saint John to $63,365 \mathrm{kw}$. by the addition of a $13,365-\mathrm{kw}$. unit and further boosis of 110,000 kw . each are scheduled for 1966 and 1967, respectively. In May 1965, the Maine and New Brunswick Electric Power Company Limited installed a $20,800-\mathrm{kw}$. unit at the Tinker hydro plant on the Aroostook River, bringing the total installed generating capacity to $30,840 \mathrm{kw}$.

Quebec.-In 1965, Quebec's extensive program of power-plant construction added $905,000 \mathrm{kw}$. of new capacity to the province's already considerable total of almost $10,000,000$ kw., the new capacity consisting of $755,000 \mathrm{kw}$. hydro and $150,000 \mathrm{kw}$. thermal. A total of $451,920 \mathrm{kw}$. of new capacity, all hydro, is scheduled for 1966 . On the basis of present scheduling, more than $5,250,000 \mathrm{kw}$. of new capacity, most of it hydro, should come into service in Quebec during the years 1967-74.

One of North America's most spectacular engineering projects, the harnessing of the power potential of the Manicouagan and Outardes Rivers, went ahead on schedule during 1965. The project involves the construction of seven new hydro plants on the two rivers and the installation of additional capacity at an existing station. The total amount of new generating capacity to be made available by the Manicouagan-Outardes project will be in excess of $5,500,000 \mathrm{kw}$. Manic 2, eleven miles from the mouth of the Manicouagan River, went into operation in 1965 with $635,000 \mathrm{kw}$. of generating capacity in five units; three more units will complete the development of Manic 2, two scheduled for 1966 and the third for 1967. Manic 1, the next plant scheduled to produce power on the Manicouagan, will be in service in 1966 with two units, each rated at $61,660 \mathrm{kw}$.; a third unit, which will complete the development of Manic 1, will be in service in 1967 The largest development in the Manicouagan-Outardes hydro complex is Manic 5, designed for a total generating capacity of $1,344,000 \mathrm{kw}$. in eight units. When completed, the buttressed, multi-arch dam at Manic 5 will be over 4,000 feet long and 703 feet high at the highest point above bedrock and will be one of the highest and most massive dams of its kind in the world. First power is expected in 1970 and completion of the plant in 1972. Last of the new Manicouagan plants to come into service in the current program will be Manic 3, with a total generating capacity of $1,120,000 \mathrm{kw}$. in seven units; initial service is scheduled for 1972 and complete service for 1974.

On the Outardes River, power at Outardes 4 will be generated by four $158,000-\mathrm{kw}$. units, the first three of which will be in service in 1968 and the fourth in 1969. The dam at Outardes 4 will create a reservoir with a surface area of more than 250 sq . miles. The underground powerhouse planned for Outardes 3 will house four $189,000-\mathrm{kw}$. units. Three are scheduled for initial operation in 1968 and the fourth in 1969 . The Outardes 2 plant, adjacent to the existing Outardes Falls station, is due to go into service in 1968 with a total capacity of $447,000 \mathrm{kw}$. in three units.

Elsewhere in the province, Quebec Hydro is developing two sites on the Quinze Rapids reach of the Upper Ottawa River to supply power to the rapidly developing northwestern region: the Rapides-des-îles plant is designed for four $37,300-\mathrm{kw}$. units, two scheduled for 1966, the third for 1967, with development of the fourth dependent upon the magnitude of local power demands; the First Falls plant is designed for $112,000-\mathrm{kw}$. capacity in four units, three to be installed at the rate of one a year from 1968 to 1970 and the fourth at a later unscheduled date.

The capacity of Quebec's first large thermal station, the Tracy plant near Sorel, was increased in 1965 by the addition of a second $150,000-\mathrm{kw}$. unit to bring the station capacity to $300,000 \mathrm{kw}$. Two more units are scheduled for 1967 A new steam plant equipped with two $150,000-\mathrm{kw}$. generators will come into operation in 1970 to supply power to the Gaspe region.

The year 1965 was a milestone in the history of electric power transmission in Canada. Extra-high-voltage transmission is not new in this country but in 1965, for the first time, power was carried over a transmission line at 735 kv ., the highest AC voltage in commercial use anywhere in the world. The 735-kv. line commissioned in 1965 is the first of three extra-high-voltage lines built to carry power from the Manicouagan-Outardes hydro complex to demand centres in the Quebec City-Montreal area.

Manicouagan Power Company installed two $60,000-\mathrm{kw}$. units at the McCormick hydro plant on the Manicouagan River, bringing the total plant capacity to $311,250 \mathrm{kw}$. This plant will be integrated with Quebec Hydro's Manic 1 plant, now under construction, and with the Manicouagan-Outardes project.

Ontario.-During 1965, the power development program of The Hydro-Electric Power Commission of Ontario involved construction work on three hydro stations, four conventional thermal stations and two nuclear-electric plants. Extensions to two existing hydro stations were being planned and investigation of a number of hydro sites was continuing. The hydro stations under construction were the Harmon and Kipling stations on the Mattagami River and the Mountain Chute station on the Madawaska River; the conventional thermal plants were the Lakeview and Lambton coal-fired stations near Toronto and Sarnia, respectively, supplemented by the smaller oil-fired combustion turbine instailations at the A. W Manby station in Toronto and the Sarnia-Scott station in Sarnia; the nuclear-electric stations were the Douglas Point station on the shore of Lake Huron and the Pickering station near Toronto.

The Harmon hydro development began operation in 1965 with a generating capacity of $129,200 \mathrm{kw}$; there is provision in the plant for two additional units. Kipling station, designed for a capacity of $125,400 \mathrm{kw}$. in two units and with provision for two additional units, was scheduled for operation in 1966. At the Mountain Chute hydro site on the Madawaska River, two units, each rated at $69,750 \mathrm{kw}$., are scheduled for service in late 1967. Ontario Hydro proposes to install additional generating capacity at Barrett Chute and Stewartville stations, both of which went into service in the 1910s on the Madawaska River downstream from Mountain Chute. At Barrett Chute the addition of two $60,000-$ kw . units in 1968 will bring the total capacity to $160,800 \mathrm{kw}$., and at Stewartville two $50,000-\mathrm{kw}$. units to go into operation in 1969 will increase the capacity to $161,200 \mathrm{kw}$.

Studies are being carried out to determine the feasibility of further development of the hydro potential of the Montreal and Mississagi Rivers - the first projects to be undertaken will probably be the development of the Lower Notch site and the redevelopment of the Upper Notch site, both on the Montreal River.

At Lakeview generating station on the shore of Lake Ontario, installation of the fourth $300,000-\mathrm{kw}$. unit was completed in 1965 . The ultimate capacity of Lakeview will be $2,400,000 \mathrm{kw}$. in eight units, the eighth unit scheduled for service in 1968. The Lambton station, on the St. Clair River about 14 miles south of Sarnia, will house four $500,000-\mathrm{kw}$. units to come into service at the rate of one a year between 1968 and 1971. Ontario Hydro is to install a number of combustion turbine generators in southern Ontario to serve as stand-by units and to contribute to the provision of an adequate margin of reserve capacity at times of peak load, particularly during the present period of rapid load growth. Six units were purchased in 1965 , four with a rated eapacity of $16,320 \mathrm{kw}$. per unit for installation at the A. W Manby Service Centre in western Metropolitan Toronto and two rated at $15,000 \mathrm{kw}$. per unit for installation at the Sarnia-Scott Transformer Station in Sarnia. The two units at Sarnia-Scott Transformer Station and two of the units at the A. W Manby Service Centre went into operation in December 1965. Installation of the other two units at the Service Centre will be completed in 1966.

At Douglas Point Nuclear Power Station, installation and testing of the CANDU reactor were well under way at the end of 1965 . The $200,000-\mathrm{kw}$. unit was expected to be
ready to deliver power to Ontario Hydro's East System in late 1966. Work continued on the site preparation for the $1,080,000-\mathrm{kw}$. Pickering nuclear-electric station, the two $540,000-\mathrm{kw}$. units being scheduled for initial operation in 1970 and 1971. The site is suitable for a larger station and additional units may be installed later.

Prairie Provinces.-In Manitoba, three $110,000-\mathrm{kw}$. units went into operation in 1965 at Manitoba Hydro's Grand Rapids hydro station on the Saskatchewan River. A fourth unit, scheduled for August 1968, will complete the planned development of the Grand Rapids site. The Federal Government has agreed in principle to participate with Manitoba in the development of the hydro potential of the lower Nelson River. The initial stage will include construction of a hydro plant at Kettle Rapids, diversion of flow from the Churchill River into the Nelson River system near Thompson, regulatory works at the outlet of Lake Winnipeg to control the level of that lake and the outfow from it, and high-voltage transmission lines from the Kettle Rapids site southwest to Winnipeg. The role of the Government of Canada will consist of the construction, financing and ownership of the main high-voltage transmission lines and the branch lines which may be built to international and provincial boundaries should markets develop.

In Saskatchewan, Squaw Rapids hydro plant, under development by the Saskatchewan Power Corporation on the Saskatchewan River, will reach a generating capacity of 244,000 kw . in 1966 when installation of the seventh unit is completed; an eighth unit, also rated at $43,000 \mathrm{kw}$., is scheduled for 1967 At the South Saskatchewan River Project near Outlook, first power is expected in 1968 when two $62,200-\mathrm{kw}$ generators go into service; a third unit of the same size will be added in 1969. The dam and reservoir at the project are being built by the Prairie Farm Rehabilitation Administration for irrigation purposes and power generating facilities will be installed by the Saskatchewan Power Corporation.

The Corporation is adding a $15,000-\mathrm{kw}$. gas-fired unit at the Swift Current plant to bring its total capacity to $29,550 \mathrm{kw}$. in 1966 and consideration is being given to the possibility of adding one or two more $15,000-\mathrm{kw}$. units for operation in late 1967. Contracts have been awarded for two $150,000-\mathrm{kw}$. steam turbines for Boundary Dam thermal station to be commissioned in 1969 and 1971, bringing the station's capacity to $432,000 \mathrm{kw}$.

In Alberta, the first unit at the Calgary Power Ltd. Big Bend hydro development on the Brazeau River went into service in 1965. The $144,000-\mathrm{kw}$. generator is driven by a turbine rated at $210,000 \mathrm{hp}$., the highest rating of any unit in service in Canada. A second unit, consisting of a $175,000-\mathrm{kw}$. generator and $250,000 \mathrm{hp}$. turbine, is scheduled for late 1966. The main plant is capable of housing four units. At the Big Bend site, water is carried to the main powerhouse by a 12 -mile canal. A pumping-generating plant is incorporated at the outlet of the storage reservoir. The company's Wabamun thermal station is being extended to house a $300,000-\mathrm{kw}$, coal-burning steam unit. The new unit, installation of which should be complete in late 1967, will boost the station capacity to $582,000 \mathrm{kw}$.

Canadian Utilities Limited are installing a $150,000-\mathrm{kw}$. coal-fired steam turbo-generator at the Battle River thermal plant near Forestburg for service in 1969; existing capacity at Battle River is $66,000 \mathrm{kw}$. A 20,000-kw. gas turbine unit will be installed at Simonette for operation in October 1966. Although the company does not at present operate hydroelectric generating facilities, a study of the hydro potential of the Smoky River in the Grande Prairie area has been carried out and eight sites are under consideration for possible development. The capacities that could be installed at the eight sites vary between $60,000 \mathrm{kw}$. and $620,000 \mathrm{kw}$. A $75,000-\mathrm{kw}$. gas-fired steam turbo-generator being installed at the Edmonton thermal plant is scheduled for initial service in 1966; it will bring the plant generating capacity to $405,000 \mathrm{kw}$. The City is to build a new thermal plant housing two $165,000-\mathrm{kw}$. gas-fired units, scheduled for 1970 and 1973. Chemeell (1963) Limited expects to put a new $4,000-\mathrm{kw}$. unit into service in 1966 at its $18,000-\mathrm{kw}$. Clover Bar thermal station at Edmonton.

British Columbia.-Substantial progress on the British Columbia Hydro and Power Authority's Portage Mountain development on the Peace River was reported in 1965. The development is planned for ten units with a total capacity of $2,270,000 \mathrm{kw}$., three of which are scheduled for service by the autumn of 1968 . Work progressed on the three storage dams being built by British Columbia Hydro and Power Authority under the terms of the Columbia River Treaty, which entitle Canada to one half the power benefits accruing in the United States from the regulation of $15,500,000$ acre-feet of water to be stored in Canada behind the Duncan, Arrow and Mica Dams and one half the value of the estimated flood damage prevented in the United States through the operation of the dams for flood control. The three storage dams are required by the Treaty to be in operation in 1973. The third $150,000-\mathrm{kw}$. unit at British Columbia Hydro's Burrard thermal station went into operation in 1965, bringing the station's total capacity to $450,000 \mathrm{kw}$ and a fourth $150,000-$ kw. unit should be in service in September 1967 Ultimate capacity of the plant will be $900,000 \mathrm{kw}$. in six units. During the year, generating capacity was boosted at eight of the Authority's diesel stations by a combined total of $28,361 \mathrm{kw}$.

The City of Revelstoke added a second $4,000-\mathrm{kw}$. unit at the Walter Hardman hydro plant in 1965, bringing the plant capacity to $8,000 \mathrm{kw}$. The fourth and final unit at the Cominco Ltd. Waneta hydro station on the Pend d'Oreille River will be in operation in 1966; the new unit, rated at $76,000 \mathrm{kw}$., will increase the station capacity to $292,000 \mathrm{kw}$. A $34,560-\mathrm{kw}$. turbo-generator being installed by Columbia Cellulose Company Limited for 1966 operation at the bleached-kraft mill at Watson Island near Prince Rupert will supply electric power from process steam. MacMillan, Bloedel and Powell River Limited have ordered a $30,000-\mathrm{kw}$. steam turbo-generator for the $14,925-\mathrm{kw}$. Powell River plant, to be in service in late 1966. Capacity of the Alco Ltd. Kemano hydro station will be boosted to $812,800 \mathrm{kw}$. in 1967 with the addition of an eighth unit, rated at $105,600 \mathrm{kw}$.

Yukon and Northwest Territories.-In 1965, Northern Canada Power Commission commissioned its Twin Gorges hydro plant on the Taltson River, 35 miles northeast of Fort Smith, N.W.T. This plant has an installed capacity of $18,000 \mathrm{kw}$. in one unit and is the largest hydro station in the Territories. A total of $1,610 \mathrm{kw}$. of new thermal capacity was added in 1965 at various locations in the Northwest Territories and 120 kw . in Yukon Territory.

## Section 3.-Power Generating Capability and Load Requirements

Power generating capability, as covered in this Section, is the measurement of the available generating resources of all hydro and thermal facilities at the time of the one-hour firm peak load for each reporting company, and is not equal to the capacity of such generating facilities. For example, a hydro plant may have a capacity of $100,000 \mathrm{kw}$. but if, at the time of peak load, the water available for generation is only 80 p.c. of the plant capacity requirements, then its capability is $80,000 \mathrm{kw}$.

Total generating capability has grown at a rapid rate since 1955. The annual rate of increase was 7.2 p.c. in the ten-year period $1955-65$ and 5.6 p.c. in the four-year period 1961-65. In comparison, the forecast rate of growth for the years $1966-70$ is 7.4 p.c.; thermal generating capability is expected to grow at an average rate of 13.5 p.c. a year in the forecast period compared with 13.8 p.c. in the period $1955-65$ but hydro-electric capability is expected to increase at 5.0 p.c. a year compared with 5.7 p.c. in the $1955-65$ period. This increased rate of growth in hydro generating capability in the forecast period is attributable to the large power projects under construction in relatively remote areas which will be completed within the next few years.

Among the provinces, Quebec has the largest generating capability, followed by Ontario, British Columbia and Alberta. Quebec also has the largest hydro-electric gener-
ating capability, followed by Ontario and British Columbia, but Ontario has the largest thermal capability, followed by Alberta and British Columbia. The first nuclear capability is scheduled in Ontario for late 1966.

The largest absolute growth in generating capability for the forecast years is indicated for Ontario amounting to $4,450,000 \mathrm{kw}$., followed by Quebec $3,269,000 \mathrm{kw}$., British Columbia $1,544,000 \mathrm{kw}$. and New Brunswick $621,000 \mathrm{kw}$. Ontario will meet most of its increased generating capability by adding $3,921,000 \mathrm{kw}$. in thermal capability and $529,000 \mathrm{kw}$. in hydro capability, the former including $700,000 \mathrm{kw}$. nuclear. Quebec will add $2,928,000 \mathrm{kw}$. hydro and 341,000 thermal and British Columbia $1,308,000 \mathrm{kw}$. hydro and $236,000 \mathrm{kw}$. thermal. Thus, it is apparent that thermal capability is becoming of greater importance, partly because of decreasing availability of hydro resources in provinces such as Ontario and partly because technological advances have made possible much more efficient use of thermal fuels in the operation of thermal base load plants.

Firm power peak load is the measure of the maximum average net kilowatt demand of one-hour duration from all loads, including commercial, residential, farm and industrial consumers as well as the line losses. Such load demand increased at the rate of 6.9 p.c. a year from 1955 to 1965 and 7.2 p.c. a year from 1961 to 1965; peak load demand is forecast to increase at the average rate of 7.6 p.c. a year in the period 1966-70. As a result of the rapid increase in generating capability and the somewhat slower but steady increase in the peak loads, together with the slight reduction in deliveries of firm power to the United States, the indicated reserve on net generating capability increased each year from 1955 to 1965, with the exception of 1961, 1963 and 1964. The forecast is for increases from 1966 to 1970 with the exception of 1966 . The reserve ratio as a percentage of firm power peak load, which reached a high of 28.2 p.c. in 1960 , is expected to decrease to 15.8 p.c. in 1970.

## 3.-Net Generating Capability, by Province, 1965

(Thousand kilowatts)

| Province or Territory | Type of Generating Facility |  |  |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | HydroElectric | Thermal-Electric |  |  |  |
|  |  | Steam | Internal Combustion | $\begin{gathered} \text { Gas } \\ \text { Turbine } \end{gathered}$ |  |
| Newfoundland... | 446 | 45 | 11 | - | 502 |
| Prince Edward Island.. | - | 51 | 7 | - | 58 |
| Nova Scotia. . | 141 | 482 | 3 | - | 626 |
| New Brunswictr. | 260 | 310 | 7 | - | 577 |
| Quebec.. | 10,208 | 361 | 13 | 86 | 10.618 |
| Ontario. | 5,548 | 2,885 | 7 | 74 | 8,514 |
| Manitoba. | 1,056 | 291 | 9 | $\cdots$ | 1,356 |
| Saskatchewan. . | 300 | 535 | 35 | 41 | 920 |
| Alberta. | 490 | 750 | 24 | 131 | 1,395 |
| British Columbia. | 2,692 | 843 | 115 | 177 | 3,627 |
| Yukon and Northwest Territories, | 64 | 1 | 15 | 1 | 81 |
| Cangda. | 21,214 | 6,364 | 216 | 440 | 28,874 |

(Thousand kilowatta)

| Item | Actual |  |  |  |  |  |  |  | Forecsat |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1951 | 1959 | 1960 | 1961 | 1962 | 1963 | 1984 | 1865 | 1966 | 1967 | 1968 | 1969 | 1970 |
| Net Generating Capability-Bydro-lectric................. | 9,044 | 17,086 | 18,516 | 18.388 | 18,651 |  |  |  | 22,211 | $22,957$ |  | 26,310 | 27,126 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Steam-Conventional |  |  | 3,824 | 3,773 <br> - <br> 240 <br> 351 | 4,596 | 5,104 | 5,422 | 6,354 | 7,013 | 8,298 | 8,980 | 10,689 | 1,462 |
| Nuclear. | 1,032 | 3,119 |  |  | - | - | - | - | - | 200 | 200 | 200 | 700 |
| Internal combustion, |  |  |  |  | 251 | 236 | 255 | 246 | 252 | 252 | 252 | 252 | 253 |
| Gas turbire.. |  |  |  |  | 371 | 382 | 384 | 460 | 696 | 830 | 830 | 830 | 903 |
| Totals, Net Generating Capability. | 14,076 | 20,205 |  | 22,753 | 23,869 | 25,478 | 25,025 | 络,274 | 30,172 | 32,537 | 35,539 | 38,281 | 40,44 |
| Receipts of firm power Irom United States. | - ` | $\pm$ | - | 2 | 4 | 2 | 2 | - | - | $\rightarrow$ | - | - | - |
| Deliveries of frm power to United States. | 175 | 152 | 166 | 146 | 121 | 122 | 1215 | 89 | 91 | 82 | 93 | 95 | 97 |
| Totals, Net Capability. | \$,901 | 20,053 | 22,134 | 22,609 | 23,752 | 25,358 | 25,906 | 28,185 | 30,081 | 32,445 | 35,446 | 38,186 | 40,347 |
| Peak Loads- |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Firm power peak loads within Canada. | 8,989 | 16,201 | 17.284 | 18,353 | 18,972 | 20,755 t | 22,506 | 24,205 | 28,924 | 28,841 | 30,689 | 32,944 | 34,821 |
| Indicated shortages.. | 321 | - | - | - | - | 28 | 13 | - | - | - | - | - | - |
| Totals, Indicated Pesk Loads within Canada | 9,314 | 16,201 | 17,204 | 18,353 | 18,972 | 20,783 | 22,519 | 24,205 | 26,924 | 28,841 | 3t,689 | 32,944 | 34,821 |
| Indicated Reserve. | 591 | 3,852 | 4,910 | 4,256 | 4,780 | 4,575 t | 3,387 r | 3,380 | 8,157 | 3,444 | 4,75\% | 5,242 | 5,526 |

## Section 4.-Electric Power Statistics

Electric power statisties presented in this Section are based on reports of all electrical utilities and all industrial establishments that generate energy regardless of whether or not any is sold and therefore show the total production and distribution of electric energy in Canada. Utilities are defined as companies, commissions, municipalities or individuals whose primary function is to sell most of the electric energy that they have either generated or purchased. Industrial establishments are defined as companies or individuals that generate electricity mainly for use in their own plants.

The current series of electric power statistics dates back to 1956. Earlier reports, entitled Central Electric Stations, were concerned solely with the electrical utility industry and hence excluded statistics relating to power produced by industrial establishments for their own use, although power sold by such establishments was included.

The figures of total water and thermal power generated for the years 1951-55 shown in Table 5 are compiled on the old basis, figures for 1956 are shown on both bases for comparative purposes, and those for later years are on the new basis.

## 5. - Flectric Energy Generated, by Type of Station 1951-4, and by Province 1963 and 1964

| Year and Province or Territory | Generated by- |  | Total | Year and Province or Territory | Cenerated by- |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Water Power | Thermal Power |  |  | Water Power | Theranal Power |  |
|  | '000 kwh. | '000 kwh. | ${ }^{\prime} 000 \mathrm{kwh}$, |  | ${ }^{\prime} 000 \mathrm{kwh}$. | ${ }^{\prime} 000 \mathrm{kwh}$. | 9000 kwh. |
| 1951 | 52,955,002 | 1, 896, 842 | 54, 851,844 | 1958. | 90,509, 200 | 6,975,089 | 97,484,289 |
| 1952. | 57,023,530 | 2,385, 668 | $59.409,198$ | 1959 | 97,039,830 | 7,588,653 | 104,628, 483 |
| 1953 | 58,926,462 | 3,934, 485 | 62, 850,927 | 1980 | 105,882,773 | 8,495,160 | 114,377, 933 |
| 1954. | $62,572,316$ $69,478,003$ | $3,364,124$ $3,332,589$ | 72, 93810,440 | 1961. | 103, 919,241 | 9,794,077 | 113,713,318 |
| 1956 | 73,524,583 | 4,479,770 | 78, 004,353 | 1962 | 104,050,724 | 13,418,024 | 117,468,748 |
| $1956^{\circ}$ | 81, 839.888 | 6,543,333 | 88, 383,301 | 1963. | 102,831,868 | 18,406,328 | 122,238,194 |
| 1957. | 83, 373,220 | 7,668,860 | 91.042,080 | 1964. | 113,343, 848 | 21,642,799 | 134,986,747 |
| 1963 |  |  |  | 1964 |  |  |  |
| Nfld. | 1,846, 87, | 122,730 | 2,069,604 | Nfl . | 2,294,853 | 129,223 | 2,424,086 |
| P.E.I |  | 111,140 | 211.140 | P.E.I | 2, | 123,982 | 123,982 |
| N.S. | 80, 913 | 1,331,015 | 2,135,928 | N.S. | 722.426 | 1,680,199 | 2,402,625 |
| N.B. | 1, 279, 307 | 1,031, 449 | 2,310+755 | N.B. | 1,023,516 | 1,532,275 | 2,555,79] |
|  | 49,555,200 | 378,572 $8,469,207$ | 49,933,772 | Que | 56,362,217 | -469,884 | 56, 832,101 |
|  | $29,139,865$ $4,737,458$ | 8, 469,207 | $37,609,062$ $4,855,209$ | Ont Ma | $30,186,245$ $4,800,712$ $1,80,2$ | $9,538,890$ 190,451 | $39,725,225$ $4,991,163$ |
| Sask | + $\mathbf{9 8 8}, 978$ | 2,002,398 | 4, $2,991,376$ | Sas | 1,369,211 | 1,969,968 | 3,339,179 |
| Alta | 881,167 | 3,650,078 | 4,531, 245 | alta | 1,895, 880 | 4,130,987 | 5,026,847 |
| B.C. | 11,297,833 | 1,153,035 | $15,450,868$ |  | 15, 480,140 | 1,832,531 | 17,312,67] |
| N.W.T. | 200,281 | 38,953 | 239,234 |  | 208,668 | 44.399 | 253,067 |
| Canada, 1963 | 163,831,866 | 18,406,328 | 122, 938.184 | Canada, 1964. | 113,343,948 | 21,642,799 | 134,986,747 |

${ }^{1}$ New series, see immediately preceding tert.
Of the total generation in 1964 of $134,986,747,000 \mathrm{kwh}$., 84.0 p.c. was produced from water power and 16.0 p.c. was generated thermally; the proportions differed somewhat among provinces as shown in the following statement.

| Province | Hydro | Thermal | Promince or Territory | Hydro | Thermal |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | p.e. | p.c. |  | p.e. | p.e. |
| Newfoundland., | 94.8 | 5.4 | Ontario. | 76.0 | 24.0 |
| Prince Edward Island. | - | 100.0 | Manitoba | 96.2 | 3.8 |
| Nova Scotia. | 30.1 | 69.9 | Saskatchewan | 41.0 | 59.0 |
| New Branswick. | 40.0 | 60.0 | Alberta British Columbia | 17.8 89 | 82.2 |
| Quebec....... | 99.2 | 0.8 | Yrikon and N.W.T. | 89.4 82.8 | 10.6 |

Table 6 gives summary figures of power production and distribution classified by province, and Tables 7 and 8 give figures classified by type of production establishment. Total installed capacity in Canada amounted to $27,027,347 \mathrm{kw}$. in 1964, an increase of $726,703 \mathrm{kw}$. over 1963. Of the 1964 total, $21,890,953 \mathrm{kw}$. were accounted for by utilities and the remainder by industrial establishments. During 1983 and 1964, total sales to ultimate customers amounted to $89,209,338,000 \mathrm{kwh}$. and $82,344,157,000 \mathrm{kwh}$., , respectively, of which 97.2 p.c. and 99.1 p.c., respectively, was sold by utilities.

Sales to power customers made up 58.4 p.c. of the total in 1963 and 50.9 p.c. in 1964, sales to domestic and farm customers were 28.4 p.c. and 33.1 p.c., and commercial sales 12.2 p.e. and 14.8 p.c. in the respective years. Exports to the United States in 1964 amounted to $4,159,475,000 \mathrm{kwh}$. compared with $3,612,834,000 \mathrm{kwh}$. in 1963.

[^200]6.-Summary Electric Power Statistics, by Province, 1983 and 1964

| Year and Province or Territory | Installed Generating Capacity | Energy Made Available in Canada | $\begin{gathered} \text { Exported } \\ \text { to } \\ \text { U.S.A. } \end{gathered}$ | Ultimate Cnstomers | Total Revenue from Oltimate Customers ${ }^{2}$ | Electrical Utilities |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | Employees | Salaries and Wages |
|  | kw. | '000 twb . | '000 kwh. | No. | $\$^{\prime} 000$ | No. | \$'000 |
| 1969 |  |  |  |  |  |  |  |
| Newfoundland. | 513,0.47 | 1,998,398 | - | 77,933 | 13,111 | 762 | 2,973 |
| Prince Edward Ialand.. | 57,391 | 111,140 | - | 24,466 | 3.333 | 172 | 735 |
| Novs Scotia. | 530, 198 | 2,122,193 | - | 213,381 | 34,476 | 1.648 | 6,952 |
| New Brunswick | 530,925 | 2,115,007 | 246,872 | 162,751 | 26,453 | 1,607 | 5,470 |
| Quebec. | 9,567,017 | 44,832,194 | 24,781 | 1,527,615 | 256,536 | 11,145 | 60,432 |
| Ontario. | 8,456,493 | 42,077,647 | 3,816,979 | 2,116,952 | 361, 193 | 16,286 | 94,700 |
| Manitoba. | 1,090,097 | 5,654, 323 | 15 | 298,436 | 47.181 | 2.631 | 13,655 |
| Saskatchewan. | 866,841 | 2,379,273 | - | 276,397 | 46,615 | 2,270 | 13,131 |
| Alberta. | 1,163,643 | 4,560,283 | - | 396,430 | 65,913 | 1,881 | 10,443 |
| British Columbia | 3.461,074 | 15,419,951 | 24,187 ${ }^{\text {a }}$ | 554,624 | 104,498 | 2,720 | 16,863 |
| Yukon snd N.W.T. | 63,918 | 239, 234 | - | 5,889 | 3,853 | 262 | 1,443 |
| Canada, 1963. | 36,300,644 | 121,503,443 | 3,612,834 | 5,654,854 | 060,16\% | 41,344 | 224,302 |
| 1949 |  |  |  |  |  |  |  |
| Newioundland. | 512,960 | 2,239,026 | $\cdots$ | 80,106 | 18,581 | 772 | 2,717 |
| Prince Edward Island. . | 57,491 | 123,982 | - | 25,164 | 3,725 | 180 | 786 |
| Nova Scotia. | 532,929 | 2,325,471 | - | 216,039 | 34,752 | 1,653 | 7,516 |
| New Branswick | 538,368 | 2,418,842 | 245,217 | 166,292 | 27,206 | 1,492 | 6,000 |
| Quebec. | 9,838, 302 | 49, 895,132 | 47,463 | 1,596,565 | 245,567 | 12,446 | 72,213 |
| Ontario. | 8,731,608 | 45,535,804 | 3,838,756 | 2,172,169 | 355,647 | 18,706 | 101,075 |
| Manitoba. | 1,079,291 | 5.788, 304 | - | 313,483 | 47,533 | 2,593 | 13.442 |
| Saskatchewan. | 967, 552 | 2,750,782 | - | 286,302 | 49,678 | 2,348 | 12.594 |
| Alberta.. | 1,250,705 | 5,049,708 | - | 408,375 | 69,932 | 1,911 | 11.049 |
| British Columbia...... | 3,432,549 | 17,468,383 | 28,0394 | 581,968 | 108,417 | 2,808 | 17,251 |
| Yukon and N.W.T..... | 67,502 | 253,067 | - | 6,319 | 4,302 | 296 | 1,637 |
| Canada, 1964. | 27,027,347 | 133,948,501 | 4,159,476 | 5,852,783 | 963,340 | 43,205 | 247,284 |

[^201]
## 7.-Summary Electric Power Statistics, by Type of Establishment, 1963 and 1564

| Year and Item | Electrical Utilities |  |  | Industrial Establishments | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Publicly Operated | Privately Operated | Total |  |  |
| 1953 |  |  |  |  |  |
| Installed generator capacity......... kw. | 18,640,811 | 2,559,306 | 21,200,117 | 5,100,527 | 26,300, 644 |
| Energy generated. . . . . . . . . . . . . . . . . 000 kwh. | 81, 988,548 | 11,504,680 | 93,501,225 | 28,736,968 | 122,238,194 |
| Hydro............................. | 69,667,658 | 8,445,109 | 78, 112.761 | 25,719, 105 | 105,851,866 |
| Thermal.......................... " | 12,388,888 | 3.059,57\% | 16,988,465 | 3,017,86s | 18,406,588 |
| Energy Made Availabie in Canada. .'0t0 kwh. |  | . | $\cdots$ | . | 121,509,643 |
| Disposal of energy in Canada. . . . . . , '000 kwh. | 86,583, 184 | 10,129,883 | 96,713,067 | 24,796,5761 | 121,509, 6431 |
| Energy exported to United States.... " | 2,782,096 | 683,588 | 3,465,664 | 147,170 | 3, 612,834 |
| Ultimate customers in Canada....... No. | 5,086,798 | 559.748 | 5,646,546 | 8,308 | 5,654, 854 |
| Domestic and iarm............... | 4.498,749 | 475,79\$ | 4.967.458 | 7,614 | 4,978,060 |
| Commercial...................... . | 607,980 | 67.357 | 575. 287 | 642 | 575,989 |
| Power.............................. " | 79,004 | 17.789 | 96,797 | 57 | 96,7\%4 |
| Street lighting. . . . . . . . . . . . . . . . . | 6,135 | 995 | 7,070 | 15 | 7,085 |
| Revenue irom ultimate customers... $\$ \mathbf{0} 00$ | 845,745 | 112,530 | 958,275 | 7,887 | 966,162 |
| Revenue from exports to UnitedStates " | 3,039 | 2.779 | 5,818 | 835 | 8,682 |
| Employeeg......................... No. | 36,768 | 4,576 | 41,344 | ** | . |
| Salaries and wages. . . . . . . . . . . . . . . s'000 | 203,413 | 22,889 | 226,302 | . | . |
| 1964 |  |  |  |  |  |
| Installed generator capacity......... kw. | 19,299,850 | 2,591,103 | 21,890,953 | 5,136,394 | 27,027,347 |
| Energy generated. . . . . . . . . . . . . . . '000 kwb. | 90,254,074 | 12,635,008 | 102,889,082 | 32,097, 865 | 134, 986,747 |
| Hydro. | $78,008,978$ | 8,864,514 | 84,871,487 | 28,472,461 | 115,549,948 |
| Thermal........................ ${ }^{\text {. }}$ | 14.247.101 | 5,770,494 | 18,017,595 | 9,625,204 | 21,642,799 |
| Energy Made Avallable in Canada..'00t kwh. |  |  |  |  | 133,918,501 |
| Disposal of energy in Canada....... ' 000 kwh . | 84, 164,361 $=$ | 9,274,5312 | 93, $438,892:$ | 40,509,6092 | 133, 948,501 |
| Energy exported to United States.... " | 2,785,481 | 1,212,982 | 3, 998, 463 | 161,012 | 4,159,475 |
| Ultimate customers in Canada....... No. | 5,322,330 | 521,412 | 5,843, 742 | 9,041 ${ }^{8}$ | 5,852,783 ${ }^{3}$ |
| Domentic and tarm............... " | 4,708,941 | 459.648 | 5,148,589 | 8,301 | 5,150,890 |
| Commercial....................... ${ }^{\text {a }}$ | 548.784 | 66,279 | 608,997 | 691 | 609,688 |
| Power.............................. | 69.774 | 15,628 | 85,402 | 35 | 85.457 |
| Street lighting..................... " | 5,891 | 865 | 6.754 | 14 | 6,768 |
| Revenue from ultimate customers... s/000 | 849,815 | 109,113 | 958,928 | 4,4124 | 963,3404 |
| Revenue Iromexports to United8tates " | 3,977 | 4,643 | 8,620 | 1,300 | 9.920 |
| Employees......................... ${ }^{\text {a }}$. | 38,944 | 4,261 | 43,205 | . | , |
| Salaries and wages. . . . . . . . . . . . . . . $\mathbf{8}^{\prime} 000$ | 225,505 | 21,775 | 247,280 | . | $\cdots$ |

[^202]
## 8.-Electric Power Generated classlfied by Type of Establishment, by Province, 1563 and 1964

| Year and Province or Territory | Electrical Utilities |  | Industrial Establishments | Total |
| :---: | :---: | :---: | :---: | :---: |
|  | Publicly Operated | Privately <br> Operated |  |  |
| 1863 | '000 kwh. | '000 kwh. | '000 kwh. | '000 kwh. |
|  |  |  |  |  |
| Newfoundland. | 16.964 | 1,604,452 | 448,188 | 2,069,604 |
| Prince Edward Ialand | 8,750 | 102,390 |  | 111,140 |
| Nova Scotia | 768,937 | 1,115,602 | 251,389 | 2,135,928 |
| New Brunswi | 1, 812,123 | 71,150 | 627,483 | 2,910,765 |
| Quebec. | 29,730,023 | 3,439,290 | 16,764,459 | 49,933,772 |
| Ontario. | 34,328,096 | 1,173,913 | 2,107,053 | 37,609,062 |
| Manitoba.... | $4.785,458$ |  | 69,751 | 4,855,209 |
| Saskatchewan | 2,221,803 | 653,092 | 116,381 | 2,991,376 |
| Alberta.. | 1,277,686 | 2,853,636 | 289,923 | 4,531,245 |
| British Columbia | 7,078,290 | 463,522 | 7,909,056 | 15,450,868 |
| Yukon and Northwest Territories | 168,316 | 17,633 | 53,285 | 239,234 |
| Canada, 1563 | 81,596,546 | 11,504,680 | 28,736,508 | 127, 238,194 |
| 194 |  |  |  |  |
| Newfoundland. | 18,717 | 1,942,800 | 462,569 | 2,424,086 |
| Prince Edward Island. | 5,396 | 118,586 |  | 123,982 |
| Nova Scotia.... | 808,076 | 1,329,509 | 265,040 | 2,402,625 |
| New Brunswick | 1, 855,446 | 52,084 | 648,26i | 2,555,791 |
| Quebec. | 31.663,652 | 3,489,179 | 18,679,270 | 56, 832,101 |
| Ontario. | 35,961,237 | 1,288,474 | 2,475,524 | 39,725,235 |
| Manitobs..... | 4, 914, 858 | $\stackrel{\rightharpoonup}{818} 508$ | 76,305 | 4,991,163 |
| Saskatchewan. | 2,585,228 | 618,508 | 137,343 | 3,339, 178 |
| British Columbia | 7,906,770 | - 484,619 | 8,921,382 | 17,312,671 |
| Yukon and Northwest Territories | 182,508 | 19,966 | 80, 593 | 253,067 |
| Canada, 194. | \%0,254,074 | 12,635,048 | 32,097,065 | 134,986,747 |

Average domestic and farm consumption rose from $5,084 \mathrm{kwh}$. in 1963 to $5,296 \mathrm{kwh}$. in 1964. Among the provinces, the averages in 1964 varied from a low of $2,192 \mathrm{kwh}$. in Prince Edward Island to a high of $6,919 \mathrm{kwh}$. in Manitoba. For domestic and farm customers the average annual bill was $\$ 77.89$ in 1964 as against $\$ 77.10$ in 1963 , an increase of 1.0 p.c.

Although many utilities do not keep records on farm customers separate from other domestic customers, the data reported on farm service indicate that the average consumption rose from $5,985 \mathrm{kwh}$. per customer in 1963 to $6,361 \mathrm{kwh}$. in 1964 and the average bill from $\$ 117.16$ to $\$ 118.54$.
9.-Domestic and Farm Service by Fleetric Utilities and Industrial Establishments, 1860-64

| Item | 1960 | 1961 | 1962 | 1963 | 1964 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Customers............................... No. | 4,542,780 | 4,716,819 | 4,864,464 | 4,980,35! | 5,150,890 |
| Kilowatt-hours sold. . . . . . . . . . . . . . . . . . . '000 | 20,391,857 | 21,979,672 | 23.704, 259 | 25,321,606 | 27,277,574 |
| Revenue received. . . . . . . . . . . . . . . . . . . . . $\mathbf{\$ 0 0 0}^{\text {d }}$ | 325,946 | 346,807 | 365,990 | 383,983 | 401,194 |
| Kilowatt-hours per customer............... No. | 4,489 | 4,660 | 4,873 | 5,084 | 5,296 |
| Average annual bill.......................... \$ | 71.75 | 73.53 | 75.24 | 77.10 | 77.89 |
| Revenue per kwh...................... cts. | 1.60 | 1.58 | 1,54 | 1.52 | 1.47 |

In 1964, natural gas accounted for 18.8 p.c. of thermal generation by utilities, coal for 70.5 p.c., petroleum fuels for 9.9 p.c. and nuclear fuel for 0.8 p.c.; corresponding proportions in 1963 were 22.4 p.e., 68.9 p.c., 8.1 p.c. and 0.6 p.c., respectively.
10.-Fuel Used by Electrical Utilities to Generate Power, by Province, 1963 and 1964

| Year and Province or Territory | Coal |  | Petroleum Fuets |  | Gas |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Qaantity | Value | Quantity | Valae | Quantity | Value |
|  | tons | \$ | Imp. gal. | \$ | Mci. | \$ |
| 1963 |  |  |  |  |  |  |
| Newfoundland. | - | - | 5,932,462 | 636,219 | - | - |
| Prince Edward Lsland |  | 5.751 | 9,571, 919 | 636,868 | - |  |
| Nova Scotia. | 533,839 | 5,574,994 | 9,249,872 | 701,454 | 二 |  |
| New Brunswi | 106,812 | 889,556 | 22,082,760 | 1,476,606 | ■ |  |
| Quebec. | 2,807,380 | 25,797,887 | 3, 108,232 $5,449,112$ | 601,732 876,222 | 128,815 | 48,026 |
| Manitoba | ,66,336 | 254,673 | 5,627,957 | 948,595 | 154,618 | 25,417 |
| Saskatcbewan | 1,053,750 | 2,079,238 | 21,610,718 | 1,247,389 | 11,188,712 | 1,700,110 |
| Alberta................ ........... | 582,062 | 971,781 | 5,007,788 | -384,712 | 32,508,907 | 4,814,023 |
| British Columbis......... | $\cdots$ | - | 7,342,059 | 1,237,504 | 3,156,423 | 832,928 |
| Yukon and Northwest Territories. | - | $\cdots$ | 2,168,776 | 547,526 |  | - |
| Canada, 1963 | 6,150,173 | 35,671,129 | 97,151,655 | 9,294,927 | 47,107,475 | 7,421,504 |
| 1964 |  |  |  |  |  |  |
| Newfoundland...... | - | - | 7.432.514 | 664,620 | - | - |
| Prince Edward Island |  | - | 10,778,394 | 695,493 | 二 | - |
| Nova Scotia........................ | 584, 141 | 5,994,515 | 26,222, 642 | 1,768,259 |  | - |
| New Brunswick.................... | 245,282 | 2,125,655 | 33,760,450 | 2,285, 371 | - |  |
|  | 3,080,699 | 27.986.075 | $7,763,263$ $5,552,981$ | $\begin{array}{r}1,015,757 \\ \hline 919,678\end{array}$ | 186,789 | 73,242 |
| Msnitobs | 145,200 | 576,460 | 3,811, 292 | 647,077 | 280,258 | 41.810 |
| Saskatchewan . | 1,108,755 | 2,005,334 | 19,755,519 | 1,201,884 | 9,522,089 | 1,541,455 |
| Alberts. | 1,100,443 | 1,492,912 | B,227, 334 | 439,365 | 28,088,982 | 4.458,421 |
| British Columbia.................. | - | - | $11,599,622$ $2,888,483$ | $\begin{array}{r}1,842,914 \\ \hline 914,783\end{array}$ | 6.050,986 | 1,874,408 |
| Canada, 1564................ | 6, $\mathbf{2 6 4 , 5 \%}$ | 40,180,951 | 135,793,094 | 12,345,201 | 4,129,114 | 7,989,336 |

## Section 5.- Public Ownership and Regulation of Electrical Utilities

Federal Government regulation of electrical utilities, particularly with respect to the export of electric power and the construction of lines over which such power is exported, falls within the jurisdiction of the National Energy Board established in November 1959 and concerned with all matters relating to energy resources within the jurisdiction of the Parliament of Canada (see Domestic Trade Chapter XXI, Part II, Section 4 for a brief survey of the functions and operations of the National Energy Board).

Power is generated in Canada by publicly and privately operated utilities and by industrial establishments. Table 8, p. 654, giving statistics by type of establishment, shows that 67 p.c. of the total electric power generated in 1964 was produced by publicly operated utilities, 9 p.c. by privately operated utilities and 24 p.c. by industrial establishments. However, ownership differs greatly in different areas of the country. Quebec output until recently was predominantly from privately owned plants and in Ontario almost all electric power is produced by a publicly owned utility. Figures for 1962 and
subsequent years will show a much greater proportion of publicly operated electrical utilities since they will reflect the recent provincial take-over of privately owned facilities in both British Columbia and Quebec.

Because of the absence of free market determination of prices and regulation of services in an industry that is semi-monopolistic, regulation of electrical utilities has been attempted in most provinces. Neither Newfoundland nor Prince Edward Island has a provincially operated electric power system, although in the former province a Commission, known as the Newioundland Power Commission, was established by the provincial government in 1954 for the purpose of supplying electric power wherever needed throughout the province, particularly to rural areas. In Prince Edward Island, the town of Summerside and surrounding area is served by the municipally operated Town of Summerside Electric Light Department. The functions and activities of provincially operated electric power commissions in the other provinces are summarized in the following paragraphs.

Nova Scotia.-The Nova Scotia Power Commission was created under the Power Commission Act of 1919 with the function of supplying electric power and energy by the most economical means available. The Rural Electrification Act of 1937 greatly increased the possibilities for retail service by providing financial assistance to equalize cost and revenue of extensions approved by the Governor in Council. In 1941 an amendment to the Power Commission Act authorized the Commission, subject to the approval of the Governor in Council, to regulate and control the generation, transmission, distribution, supply and use of power in the province. Certain investigatory work is carried on in the province by the Federal Government in close association with the Commission, but the control of water resources is vested in the Crown and administered under the provisions of the Nova Scotia Water Act, 1919. The Commission pays regular fees for water rights.

The territory of the Commission extends over the entire province and embraces six syatems which include 25 generating stations and more than 5,243 miles of transmission and distribution lines. Installed capacity at the end of 1965 was $184,458 \mathrm{kw}$. of which $96,708 \mathrm{kw}$. was hydro capacity. New power plant construction under way in Nova Scotia during 1965 is outlined on p. 644. Financially, the Commission is self-supporting, repaying borrowings from revenue. The balance sheet at Nov. 30, 1965 showed total fixed assets of $\$ 94,119,856$, including work in progress amounting to $\$ 13,654,064$.
11. -Capacity and Output of the Nova Scotla Power Commission, Year Ended Nov. 30, 1965

| System' and First Year of Operation | Present Installed Capacity | Outpat | Systeml and First Year of Operation | Present Installed Capacity | Output |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | kw. | kwb. |  | kw. | kwh. |
| Weatern Network- |  |  | St. Margaret (1921). . . . . . . | 10,400 | 24,892,000 |
| Harmony (1943) | 600 888 | 2,406,000 | Mersey- |  |  |
| Roseway (1930) | 888 6.000 | 2, 352, 1650 1650,827 | Original development |  |  |
| Gulch (1952) | 6,000 4,000 | $16.580,827$ $7.156,426$ |  | 21,780 | 92,568,000 |
| Portable (diesel) | +200 | 7.10, 100 | Cowie Falls (1938). | 7.200 9.000 | $33,069,200$ $37,493,600$ |
| Sissiboo (1960). | 6,000 | 18,443, 000 | Deep Brook (1950) (i) | 9,000 4,500 | $37,493,690$ $16,308,730$ |
| Weymouth (1961) | 9.000 | 27,485,840 | Canseau (diesel) (1937) | 700 | 93,740 |
| Eastern Network- <br> Barrie Brook (1940) <br> Dickie Brook (1948) <br> Malay Falls (1924). <br> Ruth Falls (1925). <br> Liscomb (1957). <br> Trenton (thermal) (195t) | 350 | 1,409,380 | Tusket (1929). | 2,160 | 8,886,703 |
|  | 3,800 | $8,265,560$ | Cumberland- |  |  |
|  | 3.600 | 8,379,394 | Maccan (thermal) (1927). . | 28,850 | 94,908,500 |
|  | 6.970 | 28,013.240 |  |  |  |
|  | 80,000 | 294,567, 700 | Totals | 184,458 | 783, 667 ,79\% |

[^203]New Brunswick.-The New Brunswick Electric Power Commission was incorporated under the Electric Act, 1920. Generating stations owned by the Commission at Mar. 31, 1966 were as follows:-

| Plont | Tupe | Capacity | Plant | Type | Capacity |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | kw. |  |  | kw. |
| Grand Falls, | Hydro | 63,000 | Grand Lake. | Steam | 10t,250 |
| Musquash. | Hydro | 6,960 | Saint John (Deek St.) | Steam | 16.000 |
| Tobique.. | Hydro | 20,000 | Chatham........... | Steam | 32,500 |
| Beechwood | Hydro | 112,500 | Grand Manan, | Diese! | 1,650 |
| Milltown. | Hydro | 3,036 |  |  |  |
| Sisson... | Hydro | 10.000 | Total Capactity, |  | 430,261 |
| Courtenay Ba | Steam | 63,365 |  |  |  |

All the above generating units with the exception of Grand Manan are interconnected in a province-wide grid system. The statistical information given in Table 12 shows the growth of the Commission's undertakings since 1962. Power plant construction under way in New Brunswick during 1965 is outlined at pp. 644-645.

## 12.-Growth of the New Brunswick Electric Power Commission, Years Ended Mar. 31, 1962-66

| Item | 1962 | 1963 | 1964 | 1965 | 1968 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| High-voltage transmission line... miles | 1,74 | 1,845 | 1,947 | 2.093 |  |
| Distribution line................ ${ }^{\text {a }}$ | 7,996 | 8.390 | 8,447 | 8,528 | 8 8,588 |
| Direct customers................ . No. | 107.415 | 117,073 | 118,443 | 121,036 | 124,030 |
| Plant capacities......... . ..... kw. | 307, 886 | 348,736 | 406,636 | 419,761 | 430,261 |
| Power generated (incl. purchases) kwh. | 1,425,489,140 | 1,644,740,890 | 1,797,928,340 | 2,207,165.360 | 2,571, 484,730 |
| Capital invested................. 8 | 158, 190, 51/ | 170,859,403 | 184,956,439 | 205,192,238 | 247,886,370 |
| Reverue..................... \% | 20,300, 856 | 22,591,554 | 24,650,853 | 29,24t,088 | 33, 108, 342 |

Quebec.-Stream and Reservoir Control.-The Quebec Streams Commission was created in 1910 (SQ 1910, c. 5) and given additional powers in 1912 (RSQ 1925, c. 46) and 1930 (SQ 1930, c. 34); it was authorized to ascertain the water resources of the province, to make recommendations regarding their control and to construct and operate certain storage dams to regulate the flow of streams. On Apr. 1, 1955, the Commission was abolished and its powers and attributions transferred to the Hydraulic Resources Department, now the Department of Natural Resources. The rivers controlled by the Commission at the time of transfer, either by means of dams on the rivers or by regulating the outflow of lakes at the headwaters, were: the St. Maurice, the Gatineau, the Lièvre, the St. Francis, the Chicoutimi, the Au Sable and the Métis. The Commission also operated nine reservoirs on the North River, two in the watershed of the Ste. Anne de Beaupré River and one at the outlet of Lake Morin on Riviere du Loup (lower). In 1965, eleven auxiliary reservoirs on the St. Maurice System and two on the Gatineau were turned over by the Department of Natural Resources to the Quebec Hydro-Electric Commission for operation and maintenance.

Storage reservoirs otherwise controlled or operated are: the Lake St. John, the Lake Manouane and Passe Dangereuse on the Peribonca River controlled by the Aluminum Company of Canada; the Onatchiway on the Shipshaw River controlled by Price Brothers and Company Limited; Memphremagog Lake on the Magog River controlled by the Dominion Textile Company; and Témiscamingue and Quinze Lakes on the Ottawa River controlled by the federal Department of Public Works. Storage reservoirs under the control of the Quebec Hydro-Electric Commission are: Témiscouata Lake on the Mada-
waska River, Kipawa Lake on the Ottawa River, Lac Dozois on the upper Ottawa River, Lac Cassé in the Bersimis River watershed and Lac Ste. Anne on the Toulnustouc River, a tributary of the Manicouagan River.

The Quebec Hydro-Electric Commission.-The Quebec Hydro-Electric Commission was established in 1944 (SQ 1944, c. 22) for the purpose of supplying power to the municipalities, to industrial and commercial undertakings and to citizens of the Province of Quebec at the lowest rates consistent with sound financial administration. On May 1, 1963, the Commission acquired control of the following privately owned electrical utilities operating in the Province of Quebec: the Shawinigan Water and Power Company, the St. Maurice Power Corporation, the Quebec Power Company, the Southern Canada Power Company, the Gatineau Power Company, the Northern Quebec Power Company, the Saguenay Electric Company, and the Lower St. Lawrence Power Company. As a result of these transactions, all electricity production, except for facilities operated by certain industrial organizations in their own manufacturing operations, was brought under the control of a single authority. The services of the Commission now cover virtually the entire province except for local distribution of small amounts of electricity by some municipalities, most of which is purchased from the Commission or jts subsidiaries.

At the end of 1965 the Commission (Hydro-Quebec) controlled, among other assets, the following hydro-electric and thermal-electric plants:-

| Item | Hydro-Electric |  | Thermal-Electric |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Plante | Capacity ${ }^{1}$ | Plants | Capacity |
|  | No. | kw. | No. | kw. |
| Hydro-Quebec only. | 9 | 4,742,260 | 1 | 36,000 |
| Subsidiaries of Hydra-Qutebec- |  |  |  |  |
| Shawinigan., | 11 | 1,532,425 | 4 | 300,740 |
| Quebec Power. | 6 | 28,370 | 7 | 1,630 |
| Southern Canada Power. | 4 | 47,256 | - | - |
| Gatineau Power. | 13 | 545,880 | - | - |
| Northern Quebec Power. | 1 | 89,600 | - | - |
| Saguenay Electric. | 4 | 8,790 | - | - |
| Lower St. Lawrence Power. | 3 | 11,350 | 2 | 5,413 |
| Totals. | 51 | 7.005,931 | 14 | 343,783 |
| Purchases by Hydro-Quebec and subsidiaries... | - | 606.000 | - | - |

${ }^{1}$ Dependable hydro-electric peak capacity at time of freeze-up approximated $6,500,000 \mathrm{kw}$.
These facilities now permit the balanced distribution of power throughout Quebec and the most efficient use of the water power resources of the province. Hydro-Quebec and its subsidiaries, at the end of 1965 , served virtually all communities in the province. Customers numbered $1,539,073$ and the distributed primary power demand was $6,911,000 \mathrm{kw}$. Total power delivered was $6,956,000 \mathrm{kw}$. Power distributed is given in terms of the net output of the sources of supply made available to the consolidated system at the time of annual primary peak; it also includes purchases of power from other power producers.

Ontario.-The Hydro-Electric Power Commission of Ontario is a corporate entity, a self-sustaining public enterprise endowed with broad powers with respect to the supply of electricity throughout the Province of Ontario. Its authority is derived from an Act of the Provincial Legislature passed in 1906 to give effect to recommendations of earlier advisory commissions that the water powers of Ontario should be conserved and developed for the benefit of the people of the province. It now operates under the Power Commission Act (SO 1907, c. 19) passed in 1907 as an amplification of the Act of 1906 and
subsequently modified from time to time (RSO 1960, c. 300 , as amended). The Commission may have from three to six members, all of whom are appointed by the LieutenantGovernor in Council. Two commissioners may be members of the Executive Council of the Province of Ontario.

The basic principle governing the financial operations of the Commission and its associated municipal utilities is that electrical service is provided at cost. The Commission interprets cost as including payments for power purchased, charges for operating and maintaining the power supply facilities, and related fixed charges. The fixed charges represent interest on debt, provisions for depreciation, allocations to reserves for contingencies and rate stabilization, and the further provision of a sinking fund reserve for retiring the Commission's capital debt. While the enterprise from its inception has been self-sustaining, the province guarantees the payment of principal and interest on all bonds issued by the Commission and held by the public. In addition, the province has materially assisted the development of agriculture by contributing under the Hydro-Electric Distribution Act toward the capital cost of extending rural distribution facilities.

The entire provincial area served is regarded for financial and administrative purposes as a unit, but there is no electrical connection between the Commission's facilities in northwestern Ontario and those serving customers in the remainder of the province. Statistics are therefore presented for two operating systems, the East System and the West System; the systems respectively serve the areas east and west of a line extending north from Lake Superior to the Albany River, a line that roughly conforms with the boundary dividing Thunder Bay District from the Districts of Algoma and Cochrane.

In addition to administering the enterprise over which it has direct control, the Commission, under the Power Commission Act and the Public Utilities Act, exercises certain regulatory functions, particulariy with respect to the group of municipal electrical utilities which it serves. In order to provide convenient and expeditious service in this dual function of regulation and supply, the Commission subdivides its province-wide operations into seven regions with regional offices located in seven major municipalities.

The Commission is concerned primarily with the provision of electric power by generation or purchase and its delivery to the electrical utilities for resale in municipalities having cost contracts with the Commission. The Commission supplies power in bulk, though not under cost contract, to direct customers, including industrial customers whose requirements are so large or so unusual as to make service by the local mumicipal utilities impracticable, mines, industries in unorganized territories, and certain interconnected systems.

In addition to these operations, which represent about 90 p.c. of its energy salea, the Commission delivers electric power to retail customers in rural areas and in a small group of about 30 municipalities served by Commission-owned local distribution facilities. Retail service throughout the province is provided for the most part, however, by the municipal electrical utilities, who supply ultimate customers in most cities and towns, in many villages, and in certain populous township areas. The municipal electrical utilities are owned and operated by local commissions.

During 1965, the Commission's investment in fixed assets at cost increased by $\$ 131,588,092$ and at the end of the year amounted to $\$ 2,893,822,848$. Total assets after deducting accumulated depreciation were $\$ 2,987,297,556$.

In 1965 a total of 360 associated municipal electrical utilities engaged in the retail distribution of electricity purchased power from the Commission. The total assets of these utilities, after deducting accumulated depreciation, amounted to $\$ 924,647,558$, of which $\$ 378,707,011$ represented the equity acquired in the Commission's syatems by the municipal utilities operating under cost contracts.

The Commission's power development program as at Dec. 31, 1965 is given in Table 13 and is also outlined at pp. 646-647.

## 18.-Current Power Development Program of The Fydro-Electric Power Commission of Ontario, as at Dee. 31, 1965

| Syatem and Development | Units | In Service | Installed Capacity |
| :---: | :---: | :---: | :---: |
|  | No. |  | kw. |
| Lakeview-pear Toronto....................... | 8 | 1961-68 | 2,400,000 |
| Douglas Point Nuclear Power-sear Kincardine. | 1 | 1966 | 200,000 |
| Kipling-Mattagami River......... | 2 | 1966 | 125, 400 |
| Mountain Chute-Madawaska River | 2 | ${ }^{1967}$ | -139.500 |
| Lambton-14 miles south of Sarnia. . . . . . | 4 | 1968-71 | 2,000,000 |
| Pickering (nuclear)-20 miles east of Toronto | 2 | 1970-71 | 1,080,000 |
| Barrett Chute (ertension)-Madawaska Rive | 2 | 1968 | 120,000 ${ }^{\text {c }}$ |
| Stewartvile (extension)-Madawsska River | $\stackrel{2}{25}$ | 1969 $1965-67$ | 100,0001 290,700 |

1 Tentative capacity.

## 14.-Resources of The Hydro-Electric Power Commission of Ontario Generated and Purchased (All Systems), December 1963-65

| Year and System | HydroElectric Stationgl | ThermalFlectric Stationg 1 | Power Purchased |
| :---: | :---: | :---: | :---: |
|  | kw, | kw. | kw. |
| December 1963East System. West System. | $\begin{array}{r} 4,437,250 \\ \quad 593,500 \end{array}$ | $\begin{array}{r} 2,015,000 \\ 93,000 \end{array}$ | 617,500 |
| Totals. | 5,03t, 750 | 2,108,000 | 617,504 |
| December 1964East System. West System. | $\begin{array}{r}4,445,250 \\ \hline 803 \\ \hline 800\end{array}$ | $\begin{array}{r} 2,027,000 \\ 93,000 \end{array}$ | 617,000 |
| Totals. | 5,038,750 | 2,120,004 | 617,000 |
| December 1965East System. West System.. | $\begin{array}{r} 4,391+350 \\ \mathbf{5 9 3}, 500 \end{array}$ | $\begin{array}{r} 2,600,000 \\ 93,000 \end{array}$ | $\stackrel{521,300}{ }$ |
| Totals. | 4,884,850 | 2,693,094 | 521,300 |

${ }^{1}$ Dependable peak capacity-the amount of power which reasorcees can be expected to supply at the time of the system primary peak requirements, assuming that all units are available and that the supply of water is normal. This capacity will vary from time to time in accordance with changing conditions. The capacity of a source of purchased power is based on the torms of the purchase contract.

## 15.-Distribution of Power to Systems of The Hydro-Flectric Power Commission of Ontario, Years Ended Dee. 31, 1960-65

Note.-Peak load generated and purchased, primary and secondary, in terms of generation.

| System | 1960 | 1961 | 1962 | 1963 | 1964 | 1985 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| East System. Weat System. | kw. $\begin{array}{r} 5,583,206 \\ 574,328 \end{array}$ | $\begin{gathered} \text { kw. } \\ 5,915,484 \\ \mathbf{5 4 8}, 448 \end{gathered}$ | $\begin{gathered} \text { kw. } \\ 6,362,585 \\ 606,300 \end{gathered}$ | $\begin{gathered} \text { kw. } \\ 6,884,726 \\ 615,570 \end{gathered}$ | $\begin{gathered} \text { kw. } \\ 7,107,890 \\ 581,100 \end{gathered}$ | $\begin{gathered} \text { kw. } \\ 7,765,107 \\ 683,300 \end{gathered}$ |
| Totals. | 6,157, 534 | 6,468, 932 | 6,968,885 | 7,300,296 | 7,688,754 | 8,348,407 |

## 16.-Growth of The Hydro-EHectric Power Commission of Ontario, 1856-65

| Year | Ultimate <br> Customers Served Directly or Indirectly | Total Power Distributed ${ }^{1}$ | Assets of Commission and Munieipal Utilities |
| :---: | :---: | :---: | :---: |
|  | No. | kw. | \$ |
| 1956. | 1,612,049 | 4,909, 104 | 2.293,492,487 |
| 1957. | 1,674,062 | 4.970 .576 | $2+363,058,384$ |
| 1958. | 1,757,405 | 5,417,536 | 2,756,758, 142 |
| 1959. | 1,830,453 | 6,018,204 | 2,909,088,086 |
| 1960. | 1,881,472 | B,157,534 | 3,044, 800, 818 |
| 1961. | 1,938,897 | 6,463,932 | 3,196,429,522 |
| 1982. | 1,991,289 | 6,968,885 | 3,148,330,722 |
| 1963. | 2,041,732 | 7.300,296 | 3,225,289,707 |
| 1964. | 2,095,754 | 7.688,790r | 3,331.568,832r |
| 1965. | 2,142,281 | 8,348,407 | 3,533,238, 103 |

[^204]Manitoba.-Manitoba Hydro is the primary developing, generating and distributing power agency in the Province of Manitoba. The corporation came into being Apr. 1, 1961, following amalgamation of the two former provincial government utilities engaged in the generation and distribution of electric power.

Manitoba Hydro operates six hydro-electric generating stations, two thermal-electric generating stations and 14 diesel-electric generating plants. The combined generating capability is $1,162,781 \mathrm{kw}$., hydro installations accounting for $910,000 \mathrm{kw}$., thermal installations for $244,000 \mathrm{kw}$. and diesel installations for $8,781 \mathrm{kw}$. Four of the hydro stations are located on the Winnipeg River and, like the thermal installations, provide power to the southern part of the province. The fifth hydro-electric generating station, rated at 160,000 kw., is situated on the Nelson River 425 miles north of Winnipeg and supplies power to The International Nickel Company of Canada Limited development and the townsite at Thompson. The sixth hydro-electric installation is the newly completed $330,000-\mathrm{kw}$. Grand Rapids Generating Station located on the Saskatchewan River. This station is connected electrically with southern Manitoba. Diesel installations are used to provide power in isolated northern communities.

In serving its 216,691 urban, rural, commercial and industrial customers, the corporation maintains some 35,264 miles of primary transmission and farm distribution lines. Approximately 98 p.c. of the total resident-occupied farms in the province are electrified and 613 cities, towns and villages are provided with power service. While Manitoba Hydro supplies power for most of the province including the cities and municipalities adjoining the city of Winnipeg and comprising part of Metropolitan Winnipeg, it does not distribute power within the corporate limits of the city although it does supply a portion of the city's power requirements.

Power plant construction in Manitoba in 1965 is outiined at p. 647.
Saskatchewan.-The Saskatchewan Power Corporation was established on Feb. 1, 1949, and operates under the provisions of the Power Corporation Act (SS 1950, c. 10, as amended). It succeeded the Saskatchewan Power Commission which had operated from Feb. 11, 1929. The original functions of the Corporation included the generation, transmission, distribution, sale and supply of hydro and steam electric energy. Since 1952, the Corporation has been authorized to produce or purchase, and to transmit, distribute, sell and supply natural or manufactured gas.

On May 1, 1965, the Corporation purchased the generating and distribution facilitiea of the City of Regina and its activities now cover the entire province. During the year the

Corporation served approximately 980 urban-size communities in retail sales, and served the cities of Saskatoon and Swift Current, the town of Battleford and the hamlet of Waskesiu in bulk sales. Some bulk power was sold to the Manitoba Hydro-Electric Board and to the City of Regina previous to take-over on an exchange basis.

At the end of 1965, the Corporation served 251,361 retail customers and 42,774 customers located in communities supplied with power through bulk sales, a total of 294,135 . The retail customers included 183,785 urban customers and 67,576 classified as rural, mainly farm meters. During $1965,2,871,800,000 \mathrm{kwh}$. were made available to customers, of which $2,794,782,000 \mathrm{kwh}$. were generated in Corporation plants and $77,018,000 \mathrm{kwh}$. were purchased in bulk. At the end of the year, the Corporation had invested, at cost, $\$ 396,485,000$ in electric system assets out of a total of $\$ 551,663,000$ in plant-in-service in the combined electric and natural gas systems.

During 1965, Squaw Rapids, the first hydro-electric plant within the provincial system, supplied 34.5 p.c. of the gross generation. At the year-end, the Corporation also owned and operated six steam generating plants-two each at Saskatoon and Estevan, and one each at Regina and Moose Jaw, the latter operated only during the peak months. Steam supplied 60.2 p.c. of total system requirements and three internal combustion gas dual fuel plants-the Kindersley, the Swift Current, and the Regina B--supplied most of the remainder. System capability in operation was assessed at $800,150 \mathrm{kw}$. with $537,000 \mathrm{kw}$. in steam plants, $201,000 \mathrm{kw}$. in hydro and $62,150 \mathrm{kw}$. in gas turbine and internal combustion units and the Corporation owned and operated 73,290 miles of transmission and rural lines (excluding urban distribution and hi-lines).

Power plant construction in Saskatchewan in 1965 is outlined at p. 647.
17.-Growth of the Saskatchewan Power Corporation, 1956-65

| Year | Communities Served in Bulk and Retail Sales | Individual Meters in $\underset{\substack{\text { Served }}}{\text { Communities }}$ | Power Distributed | Revenue |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | kwh. | \$ |
| 1956. | 799 | 182,594 | 659,720,877 | 15,566,910 |
| 1957. | 870 | 178,567 | 780,6]3,534 | 18,152,460 |
| 1958. | 880 | 188,293 | 909.088, 629 | 20,687,771 |
| 1859. | 962 | 197,451 | 1,067,349,615 | 23,909, 113 |
| 1960. | 984 | 221.675 | 1,233,581,753 | 26,667,471 |
| 1961. | 901 | 229,336 | 1,498,055,955 | 30,268,598 |
| 1962. | $961{ }^{1}$ | 235,385 | 1,645, 862,278 | 33,106,018 |
| 1963. | 969 | 240.812 | 1,926,862,724 | 36,892,949 |
| 1964. | 976 | 246,289 | 2,208, 149,680 | 39,777,472 |
| 1965. | 984 | 294, 135 | 2,871,800,000 | 46,145,000 |

${ }^{1}$ November 1962 figure.
Alberta.-The generation and distribution of electric power in Alberta is handled by a combination of several municipally owned urban systems and three investor-owned companies serving the greater part of the province. The regulatory authority over the investor-owned systems is the Public Utilities Board, which has jurisdiction over the distribution and sale of electricity. The Board, which controls franchises and rates, has power to hold investigation upon complaint either by a municipality or by a utility company, and following such investigation may fix just and reasonable rates. The Alberta Power Commission controls all phases of system development, including the provincial grid system.

Power plant construction in Alberta in 1964 is outlined at p. 647.

British Columbia.-The British Columbia Hydro and Power Authority is a corporation and an agency of the Crown in right of the Province of British Columbia. The electric service of the Authority includes the generation and transmission of electricity and its distribution throughout the areas of British Columbia; the Authority also operates gas, passenger transportation and rail freight services.

Of the Authority's total electric power requirements of $9,611,097,318 \mathrm{kwh}$. for the year ended Mar. 31, 1966, $6,701,800,625 \mathrm{kwh}$. or 69.7 p.c. were produced by hydro-electric stations, $2,358,383,396 \mathrm{kwh}$. or 24.5 p.c. were produced by thermal plants and the remainder, amounting to $550,913,297 \mathrm{kwh}$., was purchased. Kilowatt-hours of electricity sold during the year $(8,505,617,262)$ rose by a remarkable 15.8 p.c. over 1964-65, nearly double the 8.3 p.c. average annual rate of increase for the preceding five years.

Impressive rates of increase in kilowatt-hours consumed were recorded for all categories of customers during 1965-66.

| Category | P.C. Increase Over Previous Year |
| :---: | :---: |
|  | 8.7 |
| ....... | 12.6 |
|  | 13.0 |
|  | 26.0 |
|  | 9.7 |
|  | 15.8 |



Across the mile-and-a-half-wide valley of the Peace River in British Columbia rises a 600 -foot-high, man-made barrier, half a mile thick at its base, which will hold back $62,000,000$ acre-feet of water in a massive reservoir that will take seven years to fill and create 1,000 miles of shoreline. When the project is finished, powerful turbines in an underground powerhouse will spin under the tremendous pressure of water from the reservoir above and generate $2,300,000 \mathrm{kw}$. of energy for the industries of the future.

At Mar. 31, 1966 the number of customers receiving electric service from the Authority was 529,241 , up 26,398 from the previous year. The average andual rate for residential customers dropped from 1.76 cents to 1.52 cents a kilowatt-hour, and the average annual residential consumption rose from $5,486 \mathrm{kwh}$. to $5,650 \mathrm{kwh}$.

## 18.-Summary Statistics of the British Columbla Hydro and Power Authority, Year Ended Mar. 31, 1366

| Item | Amount | Item | Arnount |
| :---: | :---: | :---: | :---: |
| Generating capacity............ $\mathrm{kw}^{\text {w }}$ | 2,044,228 | Proportionate Salea- |  |
| Hydro. | 1,505,7e9 | Residential...................... pec. | 30 |
| Thermal and diesel. | 738,506 | Commercial, industrial, etc. . . . . ${ }^{\text {a }}$. | 69 |
| Power requirements. . . . . . . . . . . '000 kwh. | 9,611,097 | Pole Miles of Line- |  |
| Generated................... "* | 9,060.184 | Transmission (high voltage) ....... No. | 4,204 12696 |
| Purchased.................... | 650.913 | Distribution primaries............. | 12,696 |
| ... No. | 529, 241 | Revenue (electric)................. $\% 000$ | 104,918 |
| Electricity sold................ . 000 kwh . | 8,505,617 | Capital investment (plant in operation) ............................. . . $\mathbf{s}^{\prime} 000$ | 1,026,254 |

Northwest Territories and Yukon Territory.-The Northern Canada Power Commission, formerly Northwest Territories Power Commission, was created by Act of Parliament in 1948 to supply electric power to points in the Northwest Territories where a need developed and where power could be provided on a self-sustaining basis. By legislation passed in 1950, the Act was extended to include Yukon Territory. The Commission has authority to construct and operate power plants as required in the Territories and, subject to approval of the Governor in Council, in any other parts of Canada.

The Commission has hydro-electric power developments on the Yukon River near Whitehorse, Y.T., the Mayo River near Mayo, Y.T., the Snare River northwest of Yellowknife, N.W.T., and the Taltson River northeast of Fort Smith, N.W.T. Diesel-electric plants are operated at Fort Simpson, Fort Resolution, Fort McPherson, Aklavik, and Field, B.C., and utility plants comprising power, central heat and water and sewerage services at Inuvik and Frobisher Bay, N.W.T., and at Moose Factory, Ont.

The Whitehorse Rapids power development, in service since 1958, supplies the Department of National Defence and the Department of Public Works at Whitehorse, most of the power for the city of Whitehorse, and three electric steam generators for heating the Department of National Health and Welfare hospital and two Department of Manpower and Immigration hostels. The two Snare River hydro developments, placed in service in 1948 and 1960, supply power to the mines in the Yellowknife area and, in conjunction with the Bluefish hydro-electric plant of Cominco Ltd., the town of Yellowknife; the two plants are operated by remote control from Yellowknife. The Mayo River plant has supplied power to mining properties in the Elsa and Keno areas and to the communities of Mayo and Keno City since 1952. The Taltson River Hydro Project, commissioned in late 1965, supplies the lead-zinc mining operation at Pine Point, and the communities of Fort Smith and Pine Point; the plant is operated by remote control from Fort Smith. Details of construction in the Territories during 1965 are outlined at p. 648.

# CHAPTER XVI.-MANUFAGTURES* 

CONSPECTUS
Page ..... PageSubsection 1. Major Historical and CurrentStatistics of Manufacturing.679
Subsection 2. Distribution of Manufacturing by Province and by Metropolitan Area. ..... 687
Subsection 3. Size of Manufacturing Estab-lishments Based on Employment andShipments.........699
Section 5. Federal Assibtance to Manu-facturing701

|  | Page |  | Pag |
| :---: | :---: | :---: | :---: |
| Section 1. Manufacturing and the Changing Indubtrial Structure of the Canadian Economy, 1946-65.. | 665 | Subsection 1. Major Historical and Current Statistics of Manufacturing....... |  |
|  |  | Subsection 2. Distribution of Manufacturing by Province and by Metropolitan Area. |  |
| Section 2. Exports of Manufactured Goods $\qquad$ | 675 |  | 68 |
|  |  | Subsection 3. Size of Manufacturing Establishments Based on Employment and |  |
| Section 3. Trends in Principal Statistics, 1957-64. |  | Shipments......... | 69 |
|  |  | Section 5. Federal Assibtance to Manu- |  |
| Section 4. Statibtics of Manufacturin | 679 |  |  |

The interpretation of the symbols used in the tables throughout the Year Book will be found on $p$. viii of this volume.

## Section 1.-Manufacturing and the Changing Industrial Structure of the Canadian Economy, 1946-65

Changes in the industrial structure of the Canadian economy, as reflected in long-term rates of growth of various industries, show a number of important or interesting developments involving or affecting manufacturing. At least seven major aspects merit com-ment:-
(1) The manufacturing industries have increased their apparent share in the gross domestic product in "real" terms - that is, after the effects of price changes have been removed from increases in production.
(2) The manufacturing industries have been accounting for a lower share of the gross domestic product in current dollars-that is, of production measured at the prices actually prevailing from year to year. This probably reflects a slower rate of rise in prices in manufacturing industries than in the economy as a whole; in turn, the slower price rise is at least partly a result of higher rates of growth in productivity in the manufacturing industries than in the economy as a whole.
(3) The industrial sectors of the economy that depend relatively heavily on the use of fixed capital or use manufactured goods as materials for further manufacture have probably increased their output more rapidly, in aggregate, than the economy as a whole.
(4) The introduction of new products and changes in technology have contributed heavily to the expansion of a broad range of individual manufacturing industries where growth has exceeded that of the manufacturing industries as a whole.
(5) In line with experience in other countries, certain manufacturing industries making products the demand for which is favoured by rising living standards have grown more rapidly than those making products for which demand tends to rise less rapidly than consumer income.
(6) Manufacturing industries engaged primarily in processing primary products for export have continued to play a key role in the over-all growth of the manufacturing industries. Or, in other words, the growth of the United States economy and its demand for fabricated materials has continued to exert an important influence on the expansion of manufacturing activity in Canada.
(7) In very recent years, there has been a dramatic rise in exports of finished manufactures to the United States and other countries, although these exports still do not contribute greatly to the over-all volume of manufacturing industries.

[^205]An impression of the place of manufacturing in the growth of the economy in the postwar period 1946-65 and of the effect of the growth of various industries upon that of manufacturing is given by the following annual average rates of growth of the major industrial sectors compared with that of all industries; growth is measured by the trend in the official index of their "real" gross domestic product (or physical volume of production).

| Rank | Industry | Average <br> Annual <br> Growit | Rank | Industry | Average Annual Growth |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | p.e. |  |  | p.c. |
| 1 | Electric power and gas utilities... | 9.6 | 8 |  | 4.0 |
| 2 | Mining | 9.1 | 9 | Community, recreation, business |  |
| 3 | Construction. | 5.1 |  | and personal gervice............ | 3.6 |
| 4 5 | Finance, insurance and real estate. | 5.0 4.8 | 10 | Fishing and trapping............... | 1.8 |
| 6 | Tranaportation, storage and com- | 4.8 | 11 12 | Forestry ....................... Agriculture................... | 1.7 1.5 |
| 7 | munication...................... | 4.6 4.1 |  | All Industates. | 4.4 |

The growth rates of the six fastest growing industries all exceeded that of the economy as a whole. It is significant that, although these six together accounted for only 58.4 p.c. of the gross domestic product at factor cost in 1965, over the period 1959-65 they were responsible for 77.5 p.c. of business fixed capital formation. The latter reflects not only their need for new fixed capital because of expanding output but also the relative capital intensity of much of the production represented-that is, the faster-than-average growth of these capital-using industries favoured demand for manufactured construction materials, for machinery and equipment of different kinds and for various materials such as steel, themselves the products of factories.

The following statement shows, for 1964 and 1965 and earlier periods, the share of the gross domestic product accounted for by the manufacturing industries in current dollars and, for comparison, the actual or apparent shares of these manufacturing industries in several other aggregates of the Canadian economy.

| Ilom | Annsol Averages |  |  |  | 1904 | 1968 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1946-50 | 1951-65 | 1956-60 | 1961-65 |  |  |
|  | p.c. | p.c. | p.c. | p.c. | p.c. | p.c. |
|  |  |  |  |  |  |  |
| Wages, salarieg and supplementary labour income. | 33.1 | 32.4 | 30.0 | 28.4 | 28.4 | 28.3 |
| Employmentl...................... | 26.2 | 25.9 | 25.5 | 24.2 | 25.0 | 23.8 |
| Corporation profita before taxes... | 54.6 | 52.6 | 47.1 | 46.7 | 46.1 | 45.6 |
| Buainess gross fired capital formstion (ezcl. new residential construction) | 24.5 | 23.3 | 22.7 | 24.1 | 25.9 | 27.0 |
| Domestic exporta................... | 71.8 | 68.0 | 64.7 | 63.7 | 63.4 | 64.9 |

[^206]The declining share of the manufacturing industries in labour income, as shown above, undoubtedly reflects the more rapid growth of output per man-hour in these industries than in the economy as a whole. These figures do not include all fringe benefits and thus are only a partial measure of expenses incurred in connection with the use of labour. Also, since the employment series is not necessarily comparable with the wage and salary statistics over the periods shown, inferences should not be drawn about the trend in average salaries and wages in the manufacturing industries relative to the economy as a whole. By contrast, the share of the manufacturing industries in business gross fixed capital formation (excluding new residential construction) does not show any marked
trend. There may be a connection between this fact and the downtrend in the apparent share of labour income. The increasing productivity per man-hour associated with these downtrends has required heavy capital investments in labour-saving mechanization over and above the expenditures required to merely expand production; there has been, in terms sometimes used by economists, a "deepening" as well as a "widening" of capital. This is underlined by a DBS estimate that the net stock of machinery and equipment in the manufacturing industries rose at an average annual rate of about 12 p.c. between 1946 and 1960* (like the production growth rates, this excludes the effects of price changes).

Shares in total labour income and in corporation profits are affected, of course, by relative changes in price and wage levels in various manufacturing industries. These shares and the growth of the capital stock are also affected by the changing "mix" of production as between "capital intensive" and "labour intensive" manufacturing industries. It is interesting to note that industry groups for which the production indexes advanced more rapidly than for manufacturing as a whole in the 1946-65 period paid salaries and wages amounting to 45.6 p.c. of their value added by manufacturing in 1949 (the base year for the indexes); by comparison, other manufacturing industries paid salaries and wages amounting to 49.5 p.c. of their value added in the same year. The figure for all manufacturing industries was 48.6 p.c.

The declining share of the manufacturing industries in exports-they account for almost all exports of manufactured goods-is associated with the higher rate of growth of output in the mineral industries noted earlier. As will be seen, the manufacturing industries have maintained the share of their own output that is exported.

* DBS publication Fixed Capital Flows and Stocks, Manufacturing, Canada, 1926-1960, Statistical Supplement (Catalogue No. 13-523).



## Influences on Relative Rates of Growth

As an aid in the examination of the forces underlying the changing industrial structure of the manufacturing industries, the following statement shows the major industry groups ranked according to their 1946-65 average annual percentage growth; these growth rates describe the expansion of the physical volume of output of these industries as measured by monthly indexes of industrial production.*


Where an industry group has been growing more rapidly than the average, it has been increasing its share of the volume of production of manufacturing as a whole; where it has been growing less rapidly than the average, its share has been decreasing. $\dagger$ Two major forces have contributed very noticeably to the expansion of demand for the products of several of the more rapidly growing industry groups-technological change, in a broad sense, and rising per capita real incomes (i.e., incomes adjusted for price changes). The term "technology" in its narrowest sense refers to the methods of production from an engineering viewpoint; in economics it is often expanded to cover the development of new products that better meet the needs of user industries or consumers, drawing upon techmical or scientific knowledge and generating new combinations of capital and labour just as progress in the technology of existing products does. As will be seen, the introduction of new products has had a conspicuous effect on Canadian manufacturing during the postwar period. At the same time, some of the industry groups that have grown most rapidly have benefited from the fact that per capita demand for their products tends, in the experience of Canada and of other nations as well, to grow more rapidly than per capita consumer income. On the other hand, some of the slowest growing industry groups shown above make products the demand for which tends, in any nation, to grow relatively less rapidly than per capita income.

The plywood industry may be used as an example of the effects of these forces on the growth of an industry. Technological change both in the industry itself and in the construction industry combined with a rise in per capita consumer real income to increase the production of plywood much more rapidly than the population or the real gross domestic product. The development of waterproof bonding resins prior to the 1946 -65 period laid the foundation for much of the expansion of the industry during that period and, in addition, the industry's product met a need of builders and contractors to use less labour

[^207]in puting wood products in place in certain phases of construction. Superimposed on these effects was the more rapid growth of the housing market-and probably of the home improvement market-resulting from rising per capita consumer incomes. The plywood industry also illustrates another impact of technological change on demand for products and on industrial structure which undoubtedly applies widely-that is, the effect of improved methods of production within an industry on its costs and on the price competitiveness of its products. The plywood industry has been particularly subject to advances of this nature, which have helped to expand the use of its product; the DBS selling price index for the industry was lower for 1965 than for 1956, although prices of most lumber had risen over the period.

However, in the following analyses of industry groups attention is focused on the more readily observable types of technological innovation-changes in the product-use patterns of user industries and the development of new products. No attempt has been made to assess the undoubtedly important differential effects of improvements in the productivity of particular industries from automation or other cost-cutting procedures in production.

Industry Groups.-As shown in the comparisons of growth rates of industry groups on the opposite page, the Miscellaneous manufaciures group grew almost twice as fast as manufacturing industries as a whole, both in the 20 -year postwar period and in the latest 10 years, and has been the most rapidly growing industry group in both periods. The two most obvious influences on the relative growth rates of manufacturing industries generally-technological change and higher per capita income-appear to have played their part in this very rapid expansion also. Technological change made itself felt in the growth of at least two industries in the group-scientific and professional equipment manufacture and plastics fabrication: the increasing technical sophistication of both the civilian and defence economies, expressed partly in new products, stimulated the production of scientific equipment and instruments; higher consumer incomes probably also had an impact on the scientific and professional equipment industry, since it includes the manufacture of photographic equipment and supplies. Although production figures are not published because of the small number of producers, retail sales of cameras and photographic equipment showed an average annual increase of about 18 p.c. between the 1951 and 1961 Censuses of Merchandising. This increased demand actually represents both forces: technological innovation made photography somewhat more attractive to an unskilled mass public and higher incomes increased their willingness to spend money on it. Imports have met a good part of the demand but there must have been a substantial stimulus to domestic production as well. The rapid expansion of the fabrication of plastics is attributable to technical progress in the area of plastic materials produced mainly by industries in the Chemicals and allied products group.

Products of petroleum and coal, the second fastest growing industry group, achieved its greatest expansion during the first postwar decade but has since continued to grow at a substantial rate. The discovery of large crude petroleum resources in the Canadian west in the late 1940 s had an infiuence through their effect on the cost of petroleum products relative to substitutes-a supply consideration lying outside the realm of technology. Rising consumer incomes have favoured automobile ownership; trucking has increased its share of inter-city transportation of goods; and greater relative use of oil for heating and the operation of railway locomotives have been forces acting upon the industry's growth.

The development of Canadian petroleum has also facilitated to some extent the expansion of the Chemicals and allied products group although the growth of this group rests largely on technological innovation in the field of chemistry. (This industry group has also been one of the most rapidly growing in the United States in the postwar perjod.) As already mentioned, the development of new plastics and their inroads upon the markets for other materials had an important influence on the growth of the Miscellaneous manufactures group; in turn, the supplying of the plastic resins used in the fabricating industry
has contributed to the growth record of the Chemicals and allied products group. Indeed, it is in the latter group that scientific discovery has had its most broadly based impact, as exemplified by the very substantial expansion in the production of pharmaceuticals. Increased output of synthetic detergent also added to the growth of this group, although it was partly counterbalanced by decreased output of soap, for which it is a substitute. Output of paints, varnishes and lacquers has benefited from a combination of influencesthe growth of industrial demand as the production of user industries has expanded, the fact that residential building has increased more rapidly than population, the development of easy-to-use products which has encouraged painting by householders, together with the probable tendency of the home improvement market to grow more rapidly per capita than income. Changing agricultural technology, expressed in an average annual increase of 8.2 p.c. in manufacturers' tonnage sales of fertilizers to the Canadian market (excluding sales to other manufacturers) during the 1956 -65 period, has been another source of growth. Synthetic rubber production, a result of scientific research, is classified to this group under the 1948 standard industrial classification and has no doubt stimulated its expansion, though output statistics on this product are not published.

The major technical innovation represented by the invention and development of television was the largest single factor accounting for the Electrical apparatus and supplies group occupying fourth place in postwar growth rate. The growth of television manufacturing and therefore of the Electrical apparatus and supplies group was actually rather uneven over the postwar period; manufacturers' sales of television sets, after a very steep ascent, declined somewhat after 1955 and then began climbing again in 1961. Generally, higher per capita incomes gave a broadly based stimulus to the group, as ownership of a wide range of appliances expanded; for instance, some 96 p.c. of households owned electric refrigerators in 1966 compared with 79 p.c. in 1956 and the number of households owning home freezers increased at an average annual rate of 17 p.c. in the same period. New products such as room air conditioners and, recently, electric tooth brushes were also growth features of varying importance. In addition, production of electrical and electronic products for non-consumer use was expanded, particularly of heavy electrical machinery.

The growth of the Non-metallic mineral products group was uneven over the postwar period; it was the fifth most rapidly expanding industry for the whole period but in the latest 10 years was in eleventh place-below the average rate of growth of all manufacturing industries. The unusual growth of the group during the earlier postwar period was attributable particularly to the rapid rise of ready-mix concrete production, a technological innovation that transferred large amounts of production activity from the construction industry to the concrete products industry and may conceivably have had some effect on the total amount of concrete used. Also of importance were such technological developments as the use of pre-cast concrete units in high-rise buildings and the apparent growth in the relative use of concrete blocks in building construction. The rise over the postwar period in per capita construction expenditures (deflated for price changes) favoured the level of activity in this industry group, and there has also been an uptrend in the use of hydraulic cement per dollar of these construction expenditures.

The sixth most rapid growth rate of the 1946-65 period was recorded by the Tobacco and tobacco products group. Its 6.1-p.c. rate of increase in physical volume agrees closely with the 6.6-p.c. average annual gain in cigarettes released for consumption per capita of the population. Here, a fundamental change in consumer habits, not necessarily related to higher incomes, is involved.

The Printing, publishing and allied industries have been subject to conflicting influences but have nevertheless obtained a growth rate of 5.3 p.c. in the postwar period,
the seventh highest among the industry groups and slightly above the growth rate for all manufacturing; in the $1956-65$ period, however, the growth rate was only 4.0 p.c., significantly lower than the average for all manufacturing industries. There is an indirect, inverse relationship to the high growth rate of the Electrical apparatus and supplies industries, based especially on the introduction of television and that industry's eventual virtual saturation of the consumer market with television sets. This led to heavy inroads on the advertising revenues of the printing and publishing industry, serving to lower its growth rate for the latest 10 years and for the whole postwar period. The industry group, of course, also contains much production oriented to non-consumer users of printed matter, business forms and the like, and this market has been supported by the upward movement of over-all business activity.

Output expansion of the Iron and steel products group over the postwar period was at almost the same rate as that of manufacturing industries as a whole; in the 1956-65 period, it exceeded that of all manufacturing. These trends reflect growth in primary iron and steel production and in that part of the iron and steel using industries included in this industry group under the 1948 standard industrial classification. Some comments on the primary iron and steel industry and the sheet metal industry are given on pp. 673674; the industry group also includes the household, office and store machinery industry, which benefited from the impact of higher consumer incomes on sales of certain household appliances. The primary iron and steel industry, of course, also benefited from the general uptrend in consumer appliance sales, whether included in this group or in the Electrical apparatus and supplies group.

Although the growth rate of the Textiles group was below the average for all manufacturing for the 1946-65 period, in the 1956-65 period its average annual growth rate was second highest among the industry groups. This significant advance in the recent period was attributable to the introduction of synthetic fabrics and their rapid penetration of the textile using industries. The fluctuating share of the Canadian producer in the domestic market complicates any analysis of the growth of the textile industries-and of some other industry groups discussed here-and no attempt has been made to relate the growth rates to this consideration.

The growth rate of the Rubber products industries is actually tied to that of various industrial and consumer uses of rubber besides the demand represented by motor vehicle tires. However, it is interesting to note that the growth rates for the Rubber products group for both the 1946-65 and 1956-65 periods match almost exactly those of the Transportation equipment group, which includes the motor vehicle industry. In any event, the acceleration of motor vehicle production in recent years has contributed to the increase noted in the growth of the Rubber products group, not only through the equipping of new cars but also through the large replacement market that has developed from the expansion of ownership of motor vebicles.

The Paper products group, one of the largest in dollar value, is dominated by the export of newsprint and pulp and its growth rate is correspondingly influenced by these export markets. Although the effect of the television broadcasting industry on printed media advertising and the market for newsprint has had some dampening influence on the expansion of the Paper products group, its growth has been relatively steady. Some production of hardboard is classified to this group and the changes in technology increasing the use of this product class have had some favourable effect.

The Transportation equipment group owes its growth rate over the postwar period to at least three outstanding factors-the rise in per capita car ownership; the increasing share of trucking in goods transportation, mentioned in connection with the Petroleum and coal products and the Rubber products groups; and the strong rise in the earlier postwar
period of the Aircraft and parts industry. It has thus been particularly affected by higher consumer incomes, competitive shifts in freight transportation and the defence effort. The same changes that have favoured truck production, however, have adversely affected the railway rolling-stock industry. Shipbuilding activity has been subject to a combination of influences but especially to the rise of this industry in countries with lower wages.

The relatively low over-all growth rate of the Foods and beverages group, which represents a large universe of rather diverse individual industries, can be explained by the fact that per capita expenditure on food tends to rise less rapidly than per capita real income. The sub-group of food industries has increased its physical output at an average rate of 3.6 p.c. a year over the $1946-65$ period, exactly the same growth rate as that applying to total personal expenditure on food, adjusted for price changes. This is less than the 5.0 -p.c. growth rate of the beverage industries, more favoured by the uptrend in consumer purchasing power. Both categories have, of course, increased on a per capita basis since population grew at a rate of only 2.6 p.c. over the period. There has been some trend toward consumption of food in more highly processed forms, which has assisted the food manufacturing industries. This has resulted from higher incomes and, probably, from the increasing numbers of housewives entering the labour market, both factors favouring the increased substitution of factory preparation of food for preparation in the kitchen. This reached its ultimate form in the pre-cooked frozen dinner, which is part of an important technological development, frozen foods.

The growth of the Non-ferrous metal products group has been relatively stable at 3.8 p.c. a year for both the postwar period and the latest 10 years, although there has been year-to-year fluctuation with the business cycle. The industry group includes both the primary metal and the metal fabricating industries. As will be seen from the statement on p. 674, the smelting and refining industry, influenced largely by the export market, grew at a faster rate than the group as a whole for the $1946-65$ period- 4.2 p.c. a year.

Because the Wood products group is strongly influenced by exports, particularly to the United States, the dominant influence on its growth over the postwar period has been the rate of growth of the North American market for lumber. This market was somewhat adversely affected by the rapid rise of the plywood industry in the United States, which made some inroads on the lumber requirements in that country. (Tariffs discourage export of Canadian plywood to the United States in large quantities.) However, in recent years the Canadian industry has increased its share of the United States lumber market. The output of the furniture indusiry has had about the same postwar rate of growth as dwelling unit completions, although it should be noted that the industry also includes non-household furniture and non-wood products.

The Clothing and the Leather products groups were in the lowest range of growth rates for both the 1946-65 and the 1956-65 periods. This ranking is consistent with experience in various countries of the world, that per capita consumption of these products grows less rapidly than per capita real income. These industries are also subject to import competition, the effect of which, as noted earlier, has usually not been assessed in these analyses. The average annual growth of the Leather products industries has been more rapid in the latest 10-year period, following the marked decline that had taken place in the years immediately following World War II.

All industry groups which grew more rapidly than manufacturing as a whole over the 20 -year period were characterized by a faster rate of expansion during the earlier postwar period than during the later postwar period. On the other hand, most of the other industry groups grew more rapidly during the 1956-65 period than during the earlier period.

Individual Industries.-To provide a more detailed but less comprehensive impression of forces affecting the industrial structure over the postwar period, the following statement shows growth rates for the 1946-65 period for various individual industries. These include industries for which indexes of physical volume of production are regularly published and which, over this period, might be characterized as having "high" growth rates, i.e., growth rates exceeding that of manufacturing as a whole, or as having "moderate" growth rates, i.e., those exceeding the growth rate of the population ( 2.6 p.c. a year) but not that of manufacturing as a whole. Almost all published indexes for individual industries are included, since only a very few such indexes indicate a declining trend in physical output per capita of the country's population.

Opposite these individual industries are comments on particular factors making contributions to the growth of the industry. These are not exhaustive examinations of the subject but merely point up the more conspicuous highlights of the forces stimulating growth of the industry. Again, no attempt has been made to assess the effect of import shares of the Canadian market, although fluctuations in these might be important in some industries.

| Industry | Average <br> Annual <br> Growth | Some Factors Conlibuting to Growth |
| :---: | :---: | :---: |
|  | p.c. |  |
| Hich-Growth Industries-* |  |  |
| Concrete products........... | 15.8 | Technological change: rise of ready-mir concrete production, with trangfer of activity from construction industry to manufacturing: wider use of concrete blocks, precast units, etc. |
| Telecommunication equipment...... | 13.1 | Technological innovation, especially introduction of television (rise in industry production not as higb as postwar aversge ior recent years). |
| Acids, allealis, salta and fertilizera,.... | 9.8 | Technoiogical change: new products, including increased use of fertilizers in agriculture. |
| Petroleum products.................. | 9.2 | Higher living standards leading to wider ownership of passenger cars; larger share of trucks in inter-city goods transportation; increased use of fuel oil for heating; dieselization of railways. |
| Refrigerators and appliances.......... | 8.9 | Higher liying standards leading to wider ownership of consumer appliancea; technological innovation, new products. |
| Veneers sad plywoods. | 8.4 | Technological change in construction industry, partly exploiting earlier teehnological advance in development of waterprof resins for bonding plywood. |
| Synthetic textiles and silk............ | 8.2 | Technological innovation, new products; large impact from scientific research. |
| Hydraulic cement.................... | 7.8 | Heavy fized capital formation in the Cans dian economy, extensive engineering construction; some spparent displacement of competitive material. |
| Aircraft and parts..................... | 7.4 | Rise of aircraft production for defence early in postwar period; later trend not similar although production still at a high level. |
| Primazy iron and steel................ | 6.8 | Growth of using industries, i.e., motor vebicles, pipeline construction, building construction, etc. |
| Motor vehisles......................... | 6.2 | Higher living atandards leading to wider ownership of paseenger cars; increased share of trucking in inter-city goods transportation. |

[^208]Industry $\quad$\begin{tabular}{c}

| Averags |
| :---: |
| Annual |
| Grototh | <br>

p.c.
\end{tabular}

## High-Growth Industries-* concluded

Sheet metal products.
5.9 Increases in use of wide variety of products and new products, i.e., architectural and ornamental metal in buildings and pressure cans in packaging.

| Distilleries. | 5.6 | Rising population, incomes and per capita consumption of distilled liquors in U.S. export market, with increased market share for imports there. Rising incomes have alao favoured per capita domestic consumption. |
| :---: | :---: | :---: |
| Carbonated beverages. | 5.6 | Higber living standards, faster rise in younger age groups than in total population. |
| Motor vehjele parts., | 5.4 | Increase in motor vehjele production cansing growth of both original equipment and replacement markets. Same influences as on motor vehicle production. |
| Hesvy electrical machinery.......... | 4.9 | Heavy investment in electrical utilities accompanying rising population and increased | per capita use of electricity.

## Moderate-Growth Industries- $\dagger$

Dairy producto.
4. 6 Higher per capita income has favoured per capits consumption of some products.
Miscellaneous foods.....................
4.6 In early postwar period, legalization of margarine.
Has kept pace with growth rate of real domestie product for same period-also 4.4 p.e.; outstripped business expenditures on equipment for grose fixed capital formation, which grew 3.7 p.c. per year, excluding price changes. Benefits to Cansdian manufacturers from mechanization of farming througbout North America.

| Breweries. | 4.4 | Higber per capita income. |
| :---: | :---: | :---: |
| Iron castings........................... | 4.3 | Rapid growth of pipe manufacture for pipelines in mid-19503 (steel pipe classified to this industry even though not cast). |
| Furniture. | 4.3 | Dwelling completions rose 4.4 p.c. per year over same period (though correlation of year-to-year changes in furniture output with completions is low and furniture includes non-household types). |
| Smelting and refining. ................ | 4.2 | Growth of export markets; especially, per capits manufacturing production in U.S. |
| Putp and paper........................ | 4.0 | Growth of income in export markets (however. depressing effect from rise of television broadcasting industry in U.S. and Canada). |
| Canning and processing................ | 3.5 | Rising per capita income; technological impaet from development of frozen foods. |
| Sawmills............................. . | 3.1 | Increase in share of U.S. lumber market in recent years fbut some of long-term growth of that market loet to U.S. plywood industry). |
| Meat products. . . . . . . . . . . . . . . . . . | 3.1 | Population growth, but higher incomes have switched demand to beer. (This industry does not cover all poultry processing, which rose sharply over this period.) |
| Grain mills......................... | 2.8 | Technological change; expansion of use of prepared feeds and concentrates by farmers. This kept the industry just abead of population growth, as flow exports declined and domestic flour shipments rose little over period.) |

[^209]Individual industries where the physical volume of production increased less rapidly than population during the 1940 - 65 period were: bakery products ( 2.5 p.c. a year); domestic clay products ( 2.4 p.c.); brass and copper products ( 2.3 p.c.); boots and shoes ( 2.0 p.c.); cotton goods ( 1.7 p.e.); and shipbuilding and repair ( 0.3 p.e.). Two regularly published individual industry indexes showed declining trends over the postwar period: wool goods ( $\mathbf{- 1 . 1}$ p.c.) and railway rolling-stock ( -3.3 p.c.).

## Section 2.-Exports of Manufactured Goods

It will be observed in the statement on p. 668 that the industry groups well known for exporting a substantial proportion of their output-Paper products, Non-ferrous metal products, and Wood products-were not among those growing more rapidly than manufacturing as a whole over the postwar period. But, as already mentioned, the mantufacturing industries appear to have approximately maintained the proportion of their production which is exported and, in very recent years, there has been a marked uptrend in exports of highly manufactured goods.

In stating that the ratio of exports of manufactured goods to manufacturers' shipments has been maintained, the first three postwar years are excluded from consideration because exports of manufactured goods were abnormally high in the unusual conditions of that period. However, in the years since then, exports of fabricated materials and end-products (approximately equivalent to exports of manufactured goods) were equal to the following percentages of the value of manufacturers' shipments of goods of their own manufacture:-

|  | p.e. |  | p.e. |  | p.c. |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1949 | 15.8 | 1955. | 15.3 | 1961 |  |
| 1950 | 15.7 | 1956. | 14.4 | 1962 | 15.3 |
| 1951. | 16.2 | 1957. | 14.4 | 1963. | 15.4 |
| 1952. | 18.5 | 1958. | 14.1 | 1964 | 16.6 |
| 1953. | 15.1 |  | 14.1 |  |  |
| 1954. | 15.4 | 1960. | 15.0 |  |  |

There are some discontinuities in the shipments figures used above but the effect on the percentages is not great. However, for the $1949-55$ period, the annual percentages averaged 14.6; for the $1956-60$ period, 14.4 ; and for the $1961-64$ period, 15.7

As for exports of manufactured goods (deflated for price changes), the following statement shows the average annual percentage increases in the physical volume of different classes of exports over specified periods:*-

|  |  | Annual Averaqes |  |
| :---: | :---: | :---: | :---: |
|  | 1946-65 | 1956-65 | 1961-65 |
|  | p.e. | p.e. | p.c. |
| Crude materiale. | 6.3 | 5.4 | 8.1 |
| Manufactured goods- $\dagger$ |  |  |  |
| Fabricated materisls. . | 3.9 | 4.9 | 6.7 |
| End-products........................................... | 1.1 | 11.5 | 21.9 |
| All Domestic Exports.. | 4.1 | 6.0 | 9.5 |

The recent strong upward movement in exports of end-products is conspicuous; machinery and other highly manufactured goods have figured strongly in these increases.

[^210]
## Section 3.-Trends in Principal Statistics, 1957-64

When the revised (1960) standard industrial classification was introduced, previously published statistics for the 1957-59 period were re-compiled on the same basis. Thus, with the publication of 1964 data, eight years of principal statistics of the manufacturing industries became available under the revised classification system. As the reader may find some value or interest in trends revealed by these eight years of statistics, average annual rates of change are included in this Section for a selection of series.* The 1957-64 period is not represented as having any special advantages for the measurement of trends-it is simply the longest period available for all the industry groups of the revised classification. The dollar figures, of course, include the effect of price changes, so that these trends are not "growth rates" in the sense of measuring the physical volume of the industries involved; postwar growth rates of the physical volume of various manufacturing industries, using the 1948 standard industrial classification, are discussed in Section 1, pp. 673-675.

Table 1, which shows the year-to-year percentage changes in the value of shipments of goods of own manufacture for the period 1957-65 as well as the changes over the periods 1957-64 and 1961-64, makes possible the ready identification of years of greatest or least increase during the period or a comparison of various industry groups as to relative changes in particular years; increases for 1965 over 1964 are based on preliminary 1965 figures from a monthly survey. $\dagger$

Table 2 shows the average annual percentage changes in various statistics of manufacturing activity for the 1957-64 period and Table 3 gives another selection of average annual percentage changes for the 1961-64 period, covering both manufacturing activity and total activity. The introduction in 1961 of the measurement of total activity, i.e., the inclusion of the non-manufacturing activity of manufacturing establishments, made a substantial change in the content of statistics on total employees and total salaries and wages compared with previous years, so that these statistics are included only in the 1961-64 table. The 1961-64 period possesses some intrinsic interest since the Iatest expansionary phase of the business cycle began in early 1961 and continued through 1964. The ranking of the industry groups in Table 3 reflects in considerable degree their susceptibility to variation in activity with fluctuations in the business cycle. (Thus, of course, these average annual rates of increase are not representative of long-term rates of increase.)

Over the 1946-64 period, the value of shipments of goods of own manufacture of all manufacturing industries increased at an average annual rate of 6.7 p.c.

[^211]
## 1.-Year-to-Year Percentage Changes, 1957-65, and Average Annual Percentage Changes, 1967-64, in Shipments of Goods of Own Manufacture, by Industry Group

(The change is an increase except where the minus sign is used.)

| Industry Group | Year-to-Year Percentage Changes |  |  |  |  |  |  |  | Average Annual Percentage Changes |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | ${ }_{58}^{1957-}$ | $\begin{gathered} 1958- \\ 59 \end{gathered}$ | $\begin{gathered} 1959- \\ 60 \end{gathered}$ | $\underset{61}{1960}$ | $\begin{gathered} 1961- \\ 62 \end{gathered}$ | $\underset{63}{1962-}$ | $\underset{64}{1963-}$ | $\underset{65 \mathrm{p}}{1064-}$ | ${ }_{64}^{1957}$ | $\underset{64}{1961-}$ |
| Food and beverage industri | 8.5 | 3.0 | 1.0 | 5.1 | 6.8 | 6.2 | 7.2 | 4.4 | 5.0 | 6.7 |
| Tobacco products industrie | 22.5 | 6.4. | 3.0 | 0.2 | 3.5 | 2.7 | $-2.0$ | 7.8 | 4.0 | 1.5 |
| Rubber industries.. | $-6.9$ | 12.5 | -7.2 | 0.8 | 6.9 8.2 | 9.3 1.7 | 10.3 | 10.6 | 3.3 | 8.9 |
| Teather industries.. | -1.5 | 8.3 | -2.3 | 10.0 | 12.2 | 12.1 | 9.5 | 5.0 | 7.8 | 11.3 |
| Knitting mills.... | 0.5 | 9.2 | 4.7 | 9.9 | 6.4 | 9.0 | 8.9 | 7.6 | 7.2 | 8.2 |
| Clothing industries | -0.1 | 2.4 | 1.5 | 5.1 | 7.2 | 7.4 | 7.3 | 3.6 | 4.5 | 7.3 |
| Wood industries......... | 1.3 | 6.2 | -0.8 | 2.8 | 11.4 | 10.6 | 9.3 | 6.9 | 3.6 | 10.5 |

## 1.- Year-to- Year Percentage Changes, 1957-65, and Average Annual Percentage Changes, 1957-64, in Shipments of Goods of Own Manufacture, by Industry Group-concluded

| Industry Group | Year-to-Year Percentage Coanges |  |  |  |  |  |  |  | $\begin{gathered} \text { Average } \\ \text { Annual } \\ \text { Perentage } \\ \text { Changes } \\ \hline \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | ${ }_{58}^{\text {1957- }}$ | $\underset{50}{1958}$ | $\underset{60}{1959}$ | $\begin{gathered} 1860- \\ 61 \end{gathered}$ | $\begin{gathered} 1961- \\ 62 \end{gathered}$ | $\begin{gathered} 1962- \\ 63 \end{gathered}$ | $1963-$ | $\begin{gathered} 1964- \\ 65 \mathrm{p} \end{gathered}$ | ${ }_{64}^{1957-}$ | ${ }_{64}^{1961-}$ |
| Furniture and fixture industries. . | 0.7 | 6.7 | 1.1 | 5.9 | 7.5 | 9.1 | 11.6 | 5.5 | 5.9 | 9.3 |
| Paper and allied industries......... | 0.9 | 7.2 | 4.7 | 8.8 | 5.9 | 5.1 | 10.4 | 5.3 | 5.3 | 6.9 |
| Printing, pubishing and allied industries.. | 5.4 | 8.4 | 5.1 | 3.1 | 4.5 | 3.8 | 6.0 |  | 5.0 | . 7 |
| Primary metal industries. ........... | -11.0 | 16.6 | 6.4 | 2.8 | 6.9 | 7.3 | 14.7 | 10.3 | 6.4 | 9.3 |
| Metal labricating industries | -2.0 | 9.0 | -0.6 | 5.7 | 14.3 | 8.8 | 13.8 | 8.0 | 6.9 | 11.9 |
| Machinery industriea. | -8.7 | 12.7 | 3.8 | 0.3 | 13.9 | 17.9 | 21.9 | 6.6 | 8.3 | 17.9 |
| Transportation equipment industries | -8.5 | -3.1 | -0.6 | -1.9 | 27.0 | 20.2 | 13.5 | 23.2 | 6.5 | 20.1 |
| Electrical products industries....... | -7.3 | 6.1 | 0.3 | 3.4 | 15.0 | 11.2 | 10.3 | 11.6 | 5.9 | 12.0 |
| dustries. | 5.2 | 9.2 | -2,5 | 5.6 | 14.2 | 4.6 | 13.8 | 7.5 | 6.5 | 10.1 |
| Petroleum and coal products industries. | -0.3 | 7.3 | 3.2 | 6.1 | 6.1 | 5.5 | 3.9 | $-0.1$ | 4.9 | 5.2 |
| Chemical and chemical products industries. | 8.7 | 6.2 | 3.6 | 5.6 | 7.5 | 6.6 | 9.3 | 8.8 | 6.4 | 7.7 |
| Misceilaneous manufacturing industries. | 7.8 | 10.3 | 5.1 | 12.3 | 11.2 | 8.4 | 10.0 | 5.1 | 8.4 | 9.7 |
| At Manufacturing Industries | -0.1 | 6.5 | 2.0 | 4.1 | 10.1 | 8.6 | 14.1 | 8.0 | 5.9 | 3.5 |

## 2.-Average Annual Percentage Changes in Selected Series of Manufacturing Activity, by Industry Group, 195\%-64, Ranked aecording to Percentage Increase in Shipments

(The ehange is an increase except where the minus sigu is used.)

| Rank | Industry Group | No. ol Production Workers |  |  | Total Wages | Coot of Fuel and Electricity | Cost of Materials and Supplies Used | Value of Shipments of Goods of Own Manufacture |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Male | Female | Total |  |  |  |  |
| 1 | Miscellaneous manufacturing industries. | $\begin{array}{r} \text { p.c. } \\ 4.1 \end{array}$ | p.c. | 4 | p.e. | p.c. | p.c. | p.c. |
| 2 | Machinery industrieg.............. | 2.4 | 2.0 | 2.4 | 8.3 | 3.7 | 9.9 | 8.4 |
| 3 | Tertile industries..... | 2.0 | 1.3 | 1.8 | 5.9 | 2.3 | 7.9 | 7.8 |
| 4 |  | 0.5 | 0.5 | 0.5 | 4.1 | 1.0 | 9.3 | 7.2 |
| 5 | Metal fabricating industries...... | 2.1 | 2.8 | 2.2 | 5.5 | 3.8 | 8.1 | 6.9 |
| 67 | Non-metallic mineral products... | 1.4 | 1.7 | 1.4 | 5.1 | 1.5 | 7.8 | 6.5 |
|  | tries......................... | -0.6 | 4.8 | -0.4 | 4.2 | 1.7 | 7.9 | 6.5 |
| 89 | Primary metal induatries.. | 0.8 | 2.6 | -0.8 | 4.4 | 4.0 | 7.2 | 6.4 |
|  | Chemical snd chemical products industries. |  |  | -0.1 | 3.7 | 5.1 | 5.9 |  |
| 10 | Electrical producte industrieg..... | 0.5 | 4.7 | 1.7 | 4.3 | 3.5 | 6.3 | 5.9 |
| 11 | Furnitore and fixture industries,. | 1.4 | 3.5 | 1.6 | 5.2 | 2.7 | 5.9 | 5.9 |
| 12 | Wood industries. . ${ }^{\text {Paper }}$. | 0.6 | 0.4 | 0.6 | 5.0 | 8.8 | 5.5 | 5. 6 |
| 14 | Paper and allied industries Printing, publishing and allied in- | 1.0 | -1.1 | 0.7 | 4.6 | 3.7 | 5.2 | 5.3 |
|  | dustries . . . . . . . . . . . . . . . . . | -0.1 |  | -0.1 | 4.0 | 3.4 | 4.8 | 5.0 |
| 15 | Food and beverage industries.... | 0.1 | $-0.4$ | . | 3.8 | 2.8 | 4.9 | 5.0 |
|  | dustries. .................. | -2.7-0.6 | -7.6 | -2.7 | 1.14.3 | 5.60.8 | 4.7 | 4.9 |
| 17181920 | Leather induatries. |  | 1.8 | 0.5 |  |  | 4.4 |  |
|  | Clothing industries. | -0.7 | 1.6 | 1.0 | 4.8 | 1.1 | 4.8 | 4.5 |
|  | Tobacco products industries. | 2.81.1 | -3.41.0 | -0.71.1 | $\begin{aligned} & 3.4 \\ & 5.0 \end{aligned}$ | 7.93.0 | 2.75.4 | 3.3 |
|  | Rubber industries. |  |  |  |  |  |  |  |
|  | All Manufaturing Industries. . | 0.7 | 1.4 | 4.5 | 4.7 | 2.6 | 6.2 | 5.9 |

(The change is an increase except where the minus sign is used.)

| Rank | Industry Grorup | Manteacturing Activity |  |  |  |  |  | Total Activity |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Production Workers |  | Cost of Fuel and Electricity | Cost of Materials and Supplies Used | $\left\|\begin{array}{c} \text { Value of } \\ \text { Shipoments } \\ \text { of } \\ \text { Goods } \\ \text { of Own } \\ \text { Manafacture } \end{array}\right\|$ | Value <br> Added | Total Employees |  | Value Added |
|  |  | Number | Wages |  |  |  |  | Number | Salaries and Wages |  |
|  |  | p.c. | p.c. | p.e. | p.c. | p.c. | p.e. | p.c. | p.c. | p.o. |
| 1 | Machipery industries (except electrical machinery)...... | 10.8 | 16.0 | 6.5 | 20.7 | 17.9 | 14.8 | 8.1 | 12.5 | 15.4 |
| 2 | Transportation equipment industries....................... | 8.4 | 14.4 | 7.2 | 23.0 | 20.1 | 16.8 | 7.5 | 12.8 | 15.9 |
| 3 | Metal fabricating industries (except machinery and transportation equipment industries) | 7.3 | 10.9 | 7.2 | 13.0 | 11.9 | 11.3 | 5.9 | 9.3 | 11.4 |
| 4 | Electrical products industries. . . . . . . . . . . . . . . . . . . . . . . . . . | 7.1 | 10.7 | 7.2 | 12.5 | 12.0 | 13.6 | 5.6 | 8.7 | 11.6 |
| 5 | Rubber industries. | 7.2 | 11.0 | 6.2 | 11.6 | 8.9 | 8.6 | 4.7 | 8.4 | 9.1 |
| 6 | Textile industries. | 6.3 | 10.1 | 5.5 | 12.0 | 11.3 | 11.7 | 4.5 | 9.1 | 11.4 |
| 7 | Furniture and fixture indugtries. | 4.6 | 9.0 | 5.1 | 10.3 | 9.3 | 8.8 | 4.3 | 8.1 | 8.8 |
| 8 | Miscellaneous manuiacturing industries....... . . . . . . . . . . . | 5.2 | 8.8 | 8.7 | 9.8 | 9.7 | 9.8 | 4.0 | 8.5 | 8.3 |
| 9 | Primary metal industrieg, | 3.5 | 6.8 | 6.1 | 10.5 | 9.3 | 8.6 | 3.6 | 7.0 | 8.8 |
| 10 | Non-metallic mineral producta induatries. | 3.5 | 7.7 | 5.7 | 11.0 | 10.1 | 9.7 | 3.6 | 7.4 | 10.1 |
| 11 | Wood industries. . . . . . . . . . . . . . . . . . . | 4.1 | 9.2 | 10.3 | 9.9 | 10.5 | 12.4 | 3.0 | 8.0 | 12.0 |
| 12 | Paper and salied industrieg. | 2.1 | 5.6 | 5.6 | 7.5 | 6.9 | 6.4 | 2.5 | 5.9 | 6.4 |
| 13 | Chemical and chemicai producta industries................ | 2.0 | 5.6 | 5.4 | 8.5 | 7.7 | 7.3 | 2.1 | 5.9 | 7.9 |
| 14 | Tobacoo products industries, . . . . . . . . . . . . . . . . . . . . . . . . . | 1.6 | 4.6 | 8.3 | 2.2 | 1.5 | 2.7 | 1.2 | 3.9 | 3.1 |
| 15 | Clothing industries. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 2.6 | 7.3 | 3.5 | 7.9 | 7.3 | 7.0 | 1.1 | 5.3 | 7.0 |
| 16 | Food and beverage industries.,............................ | 0.2 | 4.5 | 4.8 | 6.9 | 8.7 | 6.1 | 0.6 | 4.8 | 6.4 |
| 17 | Knitting mills, . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 2.0 | 6.5 | 2.9 | 10.4 | 8.2 | 6.6 | 0.3 | 5.1 | 6.7 |
| 18 | Printing, publishing and allied industries. | -0.1 | 4.3 | 2.9 | 5.1 | 4.7 | 4.6 | 0.2 | 4.0 | 4.6 |
| 19 | Leather industries. . | 0.5 | 4.7 | 3.0 | 2.4 | 3.8 | 5.3 | -0.9 | 2.6 | 5.1 |
| 20 | Petroleum and cosl products induatries....................... | -2.7 | 1.1 | 3.6 | 6.7 | 5.2 | -0.2 | -3.1 | 0.3 | 0.2 |
|  | All Manufacturimg Industries. | 3.0 | 8.3 | 5.8 | 10.3 | 9.5 | 8.9 | 3.2 | 7.4 | 1.4 |

## Section 4.-Statistics of Manufacturing

## Subsection 1.-Major Historical and Current Statistics of Manufacturing

Statistics on manufacturing in Canada have been collected since 1870, originally in connection with the decennial or quinquennial censuses for the period 1870 to 1915 and, since 1917, through the annual Census of Manufactures. Although every effort has been made to maintain comparability in the statistics since 1917, as shown in Table 4, changes in coverage of industries, type of data collected and the method of its treatment have inevitably introduced discontinuities or lack of comparability in certain components. One such major change in concept occurred in 1952 when the gross value of products was replaced by the value of factory shipments. More recently, the introduction of the revised standard industrial classification in 1960 and the new establishment concept in 1961 led to a break in continuity with previous years. An indication of the effects of these revisions in classification and concept is given in Table 4 where statistics for the 1957-59 period are given on both the 1948 standard industrial classification and manufacturing activity concept and the revised (1960) standard industrial classification and new establishment concept. Under the latter concept, a manufacturing establishment (i.e., one whose major activity is manufacturing) is the smallest reporting unit capable of reporting all of the following: materials and supplies used, goods purchased for resale as such, fuel and power consumed, number of employees and their pay, inventories, and shipments or sales.

The introduction of the total activity concept in 1962 and its application to 1961 data produced a considerable amount of data on non-manufacturing activities of manufacturing industries and has resulted in the transfer of statistics on some items, such as office and administrative workers and working owners and partners, from manufacturing to total activity. Table 5 gets out summary statistics for manufacturing activity and total activity for 1961-64. It should be noted that the 1961 data in Table 5 are not directly comparable with those for the same year in Table 4.

## 4.-Summary Statistics of Manufactures, 1817-61

Nors.-Fitures for intervening years from 1918 to 1949, not included in this table, are given in the 1962 Year Book, p. 618. Statistics of manufacturing from 1870 bave been published but between that year and 1917 figures are not on a basis comparable to the series given below; statistics for significant years sppear in the 19f3-44 Year Book, p. 363. Figures of the non-ferrous metal smelting industries were first included with manufactures in 1925.

| Year | Estab lishments | Employees: | Salaries and Wages | Cost at <br> Plant of <br> Materials <br> Used | Value Added by Manufacture ${ }^{2}$ | Value of Shipments of Goods of Own Manufactures |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Basts: Indugtrial Clabsigtcation in Use Prior to 1960 |  |  |  |  |  |
|  | No. | No. | \$ ${ }^{\prime} 000$ | \$'000 | 8'000 | 8.000 |
| 1917. | 21,845 | 808,523 | 497,802 | 1,539,679 | 1,281,132 | 2,820,811 |
| 1920 | 22,582 | 598,893 | 717,494 | 2,085,272 | 1,621,273 | 3,708, 845 |
| 1925. | 20,981 | 522,924 | 569,944 | 1,571,788 | 1,167, 937 | $2,816,865$ |
| 19304 | 22,618 | 614,690 | 697,565 | 1,664,788 | 1,522,737 | 3,280,237 |
| 19354. | 24,034 | 556,664 | 559,468 | 1,419,146 | 1, 153,485 | 2,653,911 |
| 1940. | 25,513 | 762,244 | 920,873 | 2,449,722 |  |  |
| 1945. | 29,050 | 1,119,372 | 1,845,773 | 4,473,669 | 3,564,316 | 8,250,369 |
| 19505 | 35,942 | 1.183 .297 | 2,771,267 | 7,538,535 | 5,942,058 | 13,817, 526 |
| 1951. | 87,021 | 1,258,375 | 3.276,281 | 9,074,526 | 6,840,947 | 16,392, 187 |
| 1952. | 37,929 | 1,288,382 | 3,637,620 | 9,146,172 | 7,443, 533 | 16,982,887 |
| 1953. | 38,507 | 1,327,451 | 3,957,018 | g,380,559 | 7,993,069 | 17,785,417 |
| 1954. | 38,028 | 1,267,966 | 3,896,688 | 9,241, 858 | 7,902,124 | 17.554,528 |
| 1955. | 38,182 | 1,298,461 | 4, 142,410 | 10,338,202 | 8,753, 450 | 19,513,934 |
| 1956. | 37,428 | 1,353,080 | 4,570,692 | 11,721,537 | 9,605, 425 | 21, 686,749 |
| 1957. | 37,875 | 1,359,061 | 4,819,628 | 11,900,752 | 9,822,085 | 22,183,594 |
| 1958. | 36.741 | 1, 289,602 | 4,802,496 | 11,821,567 | 9,454,955 | 22,188, 186 |
| 1959. | 36,198 | 1,303,956 | 5,073,074 | 12,552,201 | 10,320,963 | 23,311,601 |

For footnotes, see end of table, p. 680.

## 4.-Summary Statisties of Manufactures, 1917-61-concluded

| Year | Estab-lishments | Etmployeest | Salaries and Wages | Cost at Plant of Materiale Used | Value Added by Manufacture ${ }^{2}$ | Value of Shipments of Goods of Owb Manulacture ${ }^{\mathbf{1}}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Basis: Revtsed Standard Indostrial Clagsifcation and New Establisement Concept |  |  |  |  |  |
|  | No. | No. | \$'000 | \$'000 | \$ 000 | \$000 |
| 1957. | 33.551 | 1,340,948 | 4,778,040 | 11,698,789 |  | 21,452,343 |
| 1958. | 32,446 | 1,272,686 | 4,758,614 | 11,630, 825 | 9,454,954 | 21,434, 815 |
| 1959. | 32,075 | 1,287,809 | 5,030,128 | 12,339,558 | 10, 154, 377 | 22,830,827 |
| 1960. | 32,852 | 1,275,476 | 5,150,503 | 12,451,837 | 10,371,284 | 23,279, 804 |
| 1961. | 32,415 | 1,264,946 | 5,231,447 | 13,127,708 | 10,682,138 | 24,243,295 |

${ }^{1}$ Includes working owners and partners. computed by subtracting cost of fuel electricity and deduction is made from value of factory shipments and for 1954 and subsequent years from the calculated value of production. Figures prior to 1924 are not comparable because statistics for cost of electricity are not available. ${ }^{3}$ Prior to 1952, gross value of products. ${ }^{4}$ A change in the method of computing the number of employees in the years 1925 to 1930 , inclusive, increased the number somewhat over that which the method otherwise used would have given. In 1931, however, the method in lorce prior to 1925 was re-adopted.

6 Newfoundland is included from 1949 but figures for the fieh processing industry for 1949 and 1850 are not available for that province and ase not included.

## 5.-Summary Statistics of Manufactures, 1961-64

Nore.-Based on the revised standard industrial classi6cation and new establishment and total activity concepts. Figures in this table include poultry procersors, book publishers, electroplating establishments, dental laboratories, and prescription branches in the ophthalmic goods manufactares industry, not ineluded in Table 4.

| Year | Mantracturing Activttyl |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Estab-lishments | Production and Related Workers |  |  | Cost of Fuel and Elec. tricity ${ }^{2}$ | Cost of Materials and Supplies Used | Value of Shipments of Goods of Own Manufacture | Value Added |
|  |  | Number | Man- Hours Paid | Wages |  |  |  |  |
| $\begin{aligned} & 1961 . \\ & 1962 . \\ & 1963 . \\ & 1964 . \end{aligned}$ | No. |  | '000 | \$ 000 | \$ 000 | \$'000 | \% 000 | \$'000 |
|  | 33,357 | 939,413 | 1,968,163 | 3,582,943 | 516.409 | 12,579,798 | 23,438,956 |  |
|  | 33,414 33,119 | $97+, 376$ $1,003,566$ | 2,071,376 $2,137,977$ | $3,834,514$ $4,095,916$ | 540,447 564,387 | $13,974,877$ $15,337,534$ | 25,790,087 | 11,429,644 |
|  | 33,631 | 1,057,502 | 2,265,189 | 4,518,684 | 615,109 | 16,928,476 | 30,856, 103 | 13,535,994 |
|  | Total Activisy |  |  |  |  |  |  |  |
|  | Estab. lishments | Working Owners and Partners ${ }^{3}$ |  | Total Employees ${ }^{1}$ |  | Total Cost of Materials and Supplies ${ }^{5}$ Used and Gooda Purchased for Re-sale | Total Operational Revenue ${ }^{5}$ | Total Yalue Added ${ }^{7}$ |
|  |  | Number | Withdrawals | Number | Salaries and Wages |  |  |  |
|  | No. | $\begin{aligned} & 16,989 \\ & 17,228 \\ & 16,030 \\ & 15,748 \end{aligned}$ | \$'000 | $\begin{aligned} & 1,352,605 \\ & 1,389,516 \\ & 1,425,440 \\ & 1,491,257 \end{aligned}$ | \$ 000 | \$'000 | \$'000 | \$'000 |
| 1961. | 33,357 |  | $\begin{aligned} & 57,980 \\ & 60,744 \\ & 89,426 \\ & 60,099 \end{aligned}$ |  |  | 14,564,247 | 25, 895, 811 | 10,931,561 |
| 1962. | 33,414 |  |  |  | 6,096,174 | 18, 118, 144 | 28,473,319 | 11,986, 866 |
| 1963. | 33,119 33.631 |  |  |  | $6,495,289$ $7,080,940$ | 17,558, 1978 | $30,823,107$ $34,071,582$ | $12,875,073$ $14,247,187$ |
| 1964. | 33,631 |  |  |  | 7,000,940 | 19,467,899 | 34,071,582 | 14,247,187 |

1 Conceptually identical to previous years. $\quad$ ? Cannot be reported separately for manufacturing and nonmanufacturing activities but related substantially to manufacturing activity. Included with administrative 4 Includeg production and related workers, administrative and aftee employees, sales, distribution and other employees; excludes working owners and partrers. 5 Includes supplies used in both manufacturing and non-manufacturing activity. $\qquad$ - Includes shipments of goods of own manufacture, value of shipments of goods purchased for re-sale and other operational revenue. ${ }^{7}$ Value of total operational revenue less total cost of materials, supplies, fuel and electricity used and goods purchased for re-sale in the same condition; all adjusted for inventory changes where required.
6.-Summary Statistics of Manufactures, by Industry Group, 1961-64
Norm.-Based on the revised atandard industrial classification and new eatablishment and total activity concepta.

| Induatry Group and Year | Estabtish. ments | Manupacturing Activity ${ }^{\text {a }}$ |  |  |  |  |  |  | Total Activity |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Production and Related Workers |  |  | Cost of Fue! and Electricity ${ }^{2}$ | Cost of Materials and Suppliee Usect | Value of Shipments of Goods of Own Manuiacture | Value Added | Working Owners and Partners |  | Total Employees ${ }^{8}$ |  | Total Value Added ${ }^{4}$ |
|  |  | Number | ManHours Paid | Wages |  |  |  |  | Number | Withdrawals | Nurnber | $\begin{gathered} \text { Salaries } \\ \text { and } \\ \text { Wages } \end{gathered}$ |  |
|  | No. |  | '000 | \$000 | 8000 | 8 \%000 | 8 '000 | $8{ }^{\prime} 000$ |  | $8^{\prime} 000$ |  | \$ 000 | \$'000 |
| Food and beverage industries..... 1061 | 7,734 | 129,977 | 276,378 | 425,211 | 71,226 | 3,273,280 | 5,039,544 | 1,713,173 | 4.437 | 14,561 | 210,762 | 783,737 | 1,782,70t |
| Foct and beveram inductrie.....1962 | 7,678 | 129,052 | 277,031 | 441, 708 | 74, 691 | 3,515, 847 | 5,381, 572 | 1,817,145 | 4.386 | 15.911 | 210.812 | 817,723 | 1,896,798 |
| 1963 | 7,528 | 128,082 | 274,258 | 455,475 | 77, 455 | 3,764,887 | 5,714,198 | 1,899,370 | 4,127 | 15,345 | 210,118 | 848,348 | 1,988,128 |
| 1964 | 7,407 | 131,120 | 281,606 | 486,824 | 82,125 | 3,988,784 | 6,127,245 | 2,056,885 | 3,925 | 15,050 | 214,986 | 905,641 | 2,162,087 |
| Tobacco products industries...... 1981 | 37 | 7,854 | 18,513 | 30,089 | 1,034 | 206,584 | 334,930 | 127,080 | 8 | 39 | 10,392 | 43, 858 | $128,393$ |
| 1962 | 39 38 | 8,413 8,583 | 16,975 | 31, 963 | 1,289 1,404 | 212,294 | 346,517 355,981 | 125,833 | 7 | 81 17 | 11, 137 | 47,586 48,038 | $\begin{aligned} & 128,755 \\ & 135,582 \end{aligned}$ |
| 1863 1964 | 38 39 | 8,583 8.219 | 16,779. | 31,888 34,288 | 1,404 1,309 | 220,885 218,876 | 355,981 348,811 | 135,863 | 4 |  | 11, 10.81 | 49,634 | 139, 186 |
| Rubber induatríes................ 1961 | 93 | 14,298 | 30,644 | 57,524 | 5,276 | 150,069 | 331,135 | 168,847 | 10 | 33 | 21,821 | 95,737 | 175,685 |
| 1962 | 90 | 15,684 | 34, 117 | 68,331 | 5,550 | 170,771 | 353,962 | 180,528. | 9 | 31 | 22,788 | 104, 203 | 187,712 |
| 1963 | ${ }^{93}$ | 16, 879 | 36,187 | 71, 846 | 5,921 | 189,212 | 386,730 | 194, 613 | 10 | 32 | 24, 162 | 110,974 | 204,603 |
| 1964 | 95 | 17,575 | 38,175 | 79,354 | 8,315 | 208,855 | 426,624 | 218,403 | 7 | 27 | 24,972 | 122,530 | 228,333 |
| Leather industries................ 1961 | 566 | 27,543 | 56,398 | 70,972 | 2,275 | 151,426 | 291,181 | 140,458 | 193 | 736 | 33,283 | 97,442 | 142,136 |
| 1962 | 547 | 28,009 | 58,015 | 75,708 | 2,355 | 161,979 | 309,178 | 145,960 | 181 | 700 | 32,960 | 100,425 | 147,065 |
| 1963 | 539 | 28.037 | 57,624 | 77,683 | 2,414 | 158, 129 | 314,533 | 153,507 | 184 | 733 | 32,647 | 102,140 | 154,711 |
| 1964 | 543 | 27,994 | 57,419 | 82,075 | 2,488 | 165,445 | 328,055 | 163,812 | 179 | 692 | 32,40: | 105,673 | 164,970 |
| Tertile industries.................196t | 884 | 50,274 | 108,700 | 150,532 | 15, 114 | 470.792 | 874,487. | 389,157 | 383 | 1,581 | 64,969 | 224, 645 | 397, 120 |
| 1962 | 895 | 52,929 | 113, 872 | 164,627 | 15,758 | \$40,706 | 981,379 | 437, 754 | 326 | 1,432 | 67,918 | 243,021 | 44B,598 |
| 1963 | 922 | 55,193 | 119,620 | 178.984 | 16,298 | 601,691 | 1,099,838 | 489,403 | 345 | 1,727 | 70.276 | 263,380 | 497,383 |
| 1964 | 939 | 58,963 | 128,674 | 202,035 | 17,844 | 683, 672 | 1,204,563 | 541,968 | 832 | 1,724 | 74,955 | 291,933 | 549,764 |
| Kiitting mills.................... . 1961 | 358 | 18,667 | 39,272 | 44,990 | 1,927 | 117,069 | 219,378 | 101,816 | 95 | 382 | 22.691 | 62,189 | 101,208 |
| 1982 | 351 | 19.161 | 40,597 | 47,412 | 2,014 | 131,488 | 233,506 | 303, 112 | 80 | 385 | 22,816 | 63,730 | 103,185 |
| 1963 | 359 | 19,457 | 41,385 | 49, 856 | 1,994 | 144, 125 | 254,611 | 110, 170, | 75 | 338 | 22.573 | 66,551 | 110,219 |
| 1984 | 364 | 19,840 | 42,743 | 34, 623 | 2,125 | 157,821 | 277,347 | 122,766 | 70 | 298 | 22,972 | 72,383 | 122,807 |
| Clothing industries................ 1961 | 2,307 | 76,741 | 149,75B | 180, 880 | 3,018 | 427,256 | 802,719 | 378,644 | 1,066 | 4,841 | 93,306 | 256, 123 | 381,368 |
| 1982 | 2,808 | 76,729 | [53, 659 | 193,003 | 3,098 | 461,695 | 860.477 | 402,349 | 1,022 | 4,676 | 91, 652 | 265, 140 | 404.856 |
| 1963 | 2,294 | 78, 736 | 157,995 | 204,124 | 3,167 | 501,017 | 924,223 | 427,834 | 969 | 4,461 | 92,305 | 277,089 | 431,297 |
| 1984 | 2,335 | 82,945 | 165,950 | 224,443 | 3,355 | 536,363 | 991,729 | 464, 218 | 935 | 1,397 | 96,408 | 299,938 | 467,290 |

6.-Summary Statistics of Manufactures, by Industry Group, 1961-64-concluded



[^212]7.-Summary Statistles of the Forty Leading Industrles, 196s
(Ranked aceording to value of shipments of goods of own manufacture)

| Rank | Induatry | Establish. ments | Manufacturina Aduvity |  |  |  |  |  |  | Total Acrivity |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Production and Related Workers |  |  | Cost of Fuel and tricity ${ }^{2}$ | Cost of Materials and Supplies Used | Value of Shipments of Goods of Own Mantfacture | Value <br> Added | Working Owners and Partners |  | Total Employees ${ }^{3}$ |  | Total Value Added ${ }^{4}$ |
|  |  |  | Number | Man- <br> Hours Paid | Wages |  |  |  |  | Number | Withdrawals | Namber | Salaries and Wages |  |
|  |  | No. |  | '000 | \$'000 | ${ }^{\prime} \mathbf{0} 00$ | ${ }^{\prime} 000$ | \$ 000 | \$ 000 |  | \$'000 |  | \$ ${ }^{+} 000$ | \$'000 |
| 1 | Pulp and paper milla.... | 131 | 56,429 | 125, 288 | 315,973 | 138,461 | 846,406 | 1.884, 114 | 1,002,787 | 2 | 5 | 67,720 | 394, 138 | 1,011,391 |
| 2 | Motor vehicle manufacturers.... | 18 | 24,860 | 65,921 | 153,790 | 6,720 | 1,206, 433 | 1,878,817 | 491,775 | - | - | 36,026 | 234, 551 | 548,077 |
| 3 | Petroleum refining.............. | 41 | 8,535 | 14,268 | 41,881 | 11,950 | 1,089,131 | 1,371,340 | 264, 204 | - | - | 9,547 | 63,872 | 288,604 |
| 4 | Slanghtering and meat packing plants. | 263 | 19,305 | 41,144 | 90,898 | 6,916 | 972,609 | 1,198,417 | 219,769 | 100 | 343 | 26,316 | 129,358 | 230,522 |
| 5 | Iron and steel mills.............. | 42 | 33,811 | 73,408 | 200,756 | 41,442 | 512,009 | 1, 108,152 | 561,049 | - | - | 41,505 | 258,039 | 568,680 |
| 6 | Dairy factories. | 1,535 | 18,642 | 30,600 | 51,202 | 18,767 | 687,843 | 839,241 | 234,928 | 575 | 2,161 | 31,756 | 131,005 | 253,175 |
| 7 | Sawmills and planing mills. | 2,910 | 43,646 | 88,831 | 173, 698 | 18,206 | 471,809 | 845, 689 | 371,811 | 2,152 | 4,558 | 60, 328 | 209.195 | 376,328 |
| 8 | Smelting and refining | 23 | 23,238 | 48,900 | 126,109 | 52,988 | 314,567 | 718,254 | 350, 608 | - | - | 30.153 | 174, 450 | 364,749 |
| 9 | Miscellaneous machinery and equipment manuisetarere. | 496 | 24,988 | 53,772 | 120,430 | 5,245 | 338,975 | 688,205 | 353,19t | 54 | 299 | 39,396 | 204,795 | 302,587 |
| 10 | Motor vehicle parts and acces sories manufacturers. | 154 | 23,845 | 52,262 | 127.727 | 7,148 | 354,258 | 627,966 | 281,677 | 20 | 127 | 29,442 | 168, 183 | 285,814 |
| 11 | Manufacturers of industrial chemioale. | 132 | 11,591 | 25,408 | 68,074 | 49,075 | 247,628 | 617,570 | 325,953 | - | - | 18,045 | 109,180 | 344,057 |
| 12 | Miacellaneous food mandiacturers. | 281 | 8,183 | 17,387 | 31,048 | 5,682 | 330,187 | 538,968 | 205,028 | 48 | 172 | 13,258 | 61,194 | 215,298 |
| 13 | Metal stamping, pressing and coating industry. | 615 | 19,438 | 41, 713 , | 88,262 | 5,713 | 290, 430 | 532,526 | 240,834 | 159 | 681 | 25,192 | 124,513 | 250,259 |
| 14 | Commercial printing............. | 1,957 | 23,896 | 50, 124 | 110, 124 | 3,197 | 172,812 | 442,185 | 268,532 | 1,079 | 4,804 | 33,560 | 169,353 | 274, 158 |
| 15 | Bakeries.. | 2,548 | 17,886 | 38,198 | 62,402 | 11,810 | 203, 668 | 427,684 | 212,331 | 2,231 | 8,527 | 32,267 | 123,494 | 220,748 |
| 16 | Fruit and vegetable canners and preservers. | 326 | 14,384 | 30,388 | 42,688 | 5,155 | 249,448 | 414,255 | 165,817 | 86 | 303 | 18,813 |  | 172,304 |
| 17 | Printing and publishing......... | 722 | 15,024 | 30,154 | 79,270 | 3,428 | 99,405 | 406,716 | 304, 756 | 331. | 1,475 | 31,779, | 163,639 | 305,085 |
| 18 | Aircraft and parts manufacturers ${ }^{7}$ | 88 | 17.964 | 38,262 | 90.398 | 3,146 | 193.201 | 403,776 | 209,911 | 10 | 44 | 28,643 | 159, 150. | 219,322 |
| 18 | Communications equipraent manufacturers. |  | 19,62 | 42,18 | 82,345 |  | $157,996$ | $401,781$ | $249,198$ |  | 34 | 30,627 | 150,448 | 261,456 |


| 20 | Synthetic textile mills.. | 60 | 15,474 | 33,807 | 58,612 | 6,728 | 184,063 | 372,653 | 188,673 |  |  | 19,481 | 81,069 | 187,251 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 21 | Feed manulacturers. | 890 | 4,539 | 9.924 | 16,612 | 5,569 | 283.766 | 364,162 | 75,108 | 396 | 1,552 | 8,362 | 33,845 | 93,246 |
| 22 | Women's clothing factor | 628 | 24,126 | 48,023 | 70,249 | 834 | 202,366 | 354, 173 | 154,486 | 115 | 618 | 28,036 | 96.694 | 154, 812 |
| 23 | Men's elothing factories | 485 | 29,172 | 58,353 | 78,608 | 1,171 | 186,203 | 351,279 | 159,332 | 127 | 671 | 33,746 | 104,814 | 180,456 |
| 24 | Manufacturers of electrical industrial equipment. | 119 | 12,958 | 28.265 | 64,270 | 2,857 | 122,292 | 328, 4,55 | 204, 814 | 3 | 6 | 20,447 | 111,967 | 210,538 |
| 25 | Wire and wire products manufacturers. | 225 | 11,212 | 24.720 | 55,518 | 3,785 | 183,533 | 323,013 | 138,349 | 38 | 151 | 14,850 | 78,365. | 143,475 |
| 26 | Miscellaneous metal fabricating industries. | 384 | 13,589 | 28.950 | 60,482 | 5.044 | 145,460 | 306,095 | 158, 530 | 108 | 494 | 18,088 | 87,041 | 164.584 |
| 27 | Cotton yarn and cloth mills | 34 | 15,082 | 33.090 | 53,284 | 4.682 | 174,589 | 298,785 | 120,867 | - | - | 18,134 | 68,449 | 122,214 |
| 28 | Flour mills. | 55 | 2,617 | 5,768 | 11,994 | 1,865 | 238,272 | 295, 056 | 54,745 | 14. | 61 | 4,503 | 21, 489 | 59,262 |
| 29 | Breweries. | 51 | 4,999 | 10,684 | 27.446 | 3,677 | 75,195 | 291,237 | 212 |  | - | 9,247 | 55,772 | 215,283 |
| 30 | Fabricated structural metal industry ${ }^{7}$. | 89. | 10.713 | 21,667 | 56,748 | 2,216 | 144,774 | 278,092 | 131,258 | 4 | 5 | 14,602 | 82,112 | 143,196 |
| 31 | Manufacturers of major appliances (electric and nonelectric) | 39. | 9,233 | 19,3 | 41.10 | 3,134 | 158,077 | 289, | 118 | 1 |  | 12,934 | 61,269 | 122,712 |
| 32 | Household furniture industry . . . | 1,652 | 18,022 | 39,368 | 61,861 | 2,357 | 128,695 | 257,864 | 129 | 1,317 | 4,523 | 21,704 | 81,498 | 130,895 |
| 33 | Tobacco producta manufa | 21 | 6,588 | 12,747 | 29,659 | 857 | 132,160 | 250,984 | 120 |  |  | 8,956 | 43,260 | 123,382 |
| 34 | Figh products industry | 371 | 12,938 | 28,800 | 33,107 | 4,002 | 157,589 | 244,484, | 83,335 | 107 | 284 | 15,979, | 45.460 | 88,635 |
| 35 | Agricultural implement | 94 | 9,569 | 20,488 | 51,496 | 2,494 | 135, 176 | 243.963 | 114,022 | 15 | 46 | 12,474 | 68, 448 | 122,153 |
| 38 | Other paper converters. | 204 | 8,895 | 18,166 | 84,092 | 2,411 | 132,949 | 236.412 | 102,532 | 23 | 118 | 11,795 | 54,371 | 107,499 |
| 37 | Sbipbuilding and repair? | 65 | 13,970 | 29,788 | 69,907 | 2,067 | 96,011 | 234,393 | 136,322 | 3 | 5 | 17,137 | 86,870 | 138,167 |
| 38 | Sugar refineries..... | 13 | 2,459 | 5,456 | 11,333 | 3,039 | 168,475 | 228, 272 | 46,879, | - | - | 3,205 | 18,859 | 46,831 |
| 39 | Manufacturers of electrio wire and cable. | 25 | 5,061 | 11.379 | 25,466 | 2,336 | 148, 464 | 227.178 | 79,243 | 1 | - | 7,199 | 38,565 | 81,210 |
| 40 | Rubber tire and tube mantfacturers. | 11 | 6,665 | 14,653 | 36,965 | 3,193 | 122,393 | 225,728 | 304,395 | - | - | 8,520 | 48,491 | 106,953 |
|  | Totals, Leading Industrles. . | 17,940 | 655,256 | 1,404,710 | 3,003,896 | 462,34 | 12,062,421 | 21,327,774 | 8,348,255 | 9,130 | 32,153 | 304,381 | 4,457,118 | 9,285,359 |
|  | Totals, All Manafaeturing Industries. | 23,630, 1 | ,057,542 | 2,255,188 | 4,513,683 | 615,168 | 16,928,476 | 30,856,099 | 13,535,591 | 15,747 | 60,088 | 1,491,257 | 7,080,939 | 14,247,184 |

${ }^{1}$ Conceptually identical to previous years. ${ }^{2}$ Cannot be reported separately for manufacturing and non-manufacturing activities but related subatantially to manushipments and other operational revenue less total cost of materials, supplies, fuela used and purchases of products and materials for resale in the same condition; all adjusted for inventory changes where required. bConfidential. © Revised basis of valuation. ${ }^{1}$ Value of production, rather than value of shipments of goods of own manufacture, is shown.


## Volume of Manufacturing Production

Since manufacturers' selling prices change and since production from other industries (and countries) is embodied in Canadian factory shipments, a measure of fluctuations and long-term growth in the physical volume of production within the Canadian manufacturing industry itself is desirable. Such a measure of volume, or real domestic production, is provided by the index of manufacturing production. This index differs from current statistics on the gross value of factory output in two important ways besides the exclusion of price change-it uses the 1948 rather than the revised 1960 standard industrial classification and it is designed to represent net production. The indexes in Table 8 represent a substantial revision to those published earlier. (For an examination of postwar rates of growth in these indexes, see Section 1, pp. 665-672.)

Electric stoves on the assembly line, nearing completion. The 321,000 electric stoves shipped from Canadian factories in 1966 had a value of nearly $\$ 46,000,000$.

The snowmobile industry had its best year in 1966 -67 when Canadian sales reached an estimated 50,000 . About 15 plants manufacture snowmobiles in Canada, nine of them in Quebec.


The food processing industries, which are varied and numerous, have undergone considerable change in recent years. Here beans are inspected at an Ontario cannery after they have been trimmed in revolving drums.

Photos by:
Dominion Engineering Works Ltd., Montraal, Que.
Interprovincial Co-operatives Ltd., Winnipag, Man.
Conadian Westinghouse Company Limited, Hamilton, Ont,
Outboard Marine Corporation of Canada Lrd., Peterborough, Ont.
Canada Pockers, Toronio, Ont.

## 8.-Indexes of Volume of Manufacturing Production for Major Industry Groups, 1961-66

(Ranked according to 1966 percentage increase over 1965)
$(1949=100)$

| Rank | Industry Group | 1961 | 1962 | 1963 | 1964 | 1965 | 1966p | Percentage Change |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  | 1964-65 | 1965-66p |
| 2344678 | Electrical apparatue and supplies ${ }^{1}$. | 197.9 | 236.5 | 254.9 | 279.1 | 319.2 | 369.2 | +14.4 | +15.7 |
|  | Miscellaneous manufacturing........ | 292.3 | 302.0 | 353.0 | 386.5 | 407.3 | 449.4 | +14.4 +5.4 | +10.3 |
|  | Chemical products.... | 250.3 | 262.9 | 282.5 | 312.7 | 344.7 | 377.7 | +10.2 | +9.6 |
|  | Transportation equipment ${ }^{1}$ | 138.1 | 165.3 | 190.2 | 210.5 | 250.0 | 273.8 | +18.8 | +9.5 |
|  | Paper products. | 156.7 | 163.7 | 170.1 | 186.3 | 198.3 | 216.1 | +6.4 | +9.0 |
|  | Rubber products..................... | 158.6 | 182.5 | 207.4 | 232.8 | 237.4 | 238.5 | +2.0 | +8.9 |
|  | Products of petroleum and coal. | 274.0 | 291.1 | 318.0 | 330.1 | 345.9 | 371.6 | + 4.8 | + 7.4 |
|  | Printing, publishing and allied industries. | 180.4 | 189.5 | 195.2 | 207.4 | 223.3 | 239.7 | +7.8 +7.7 | + 7.3 |
| 10 | Food and beverages.................. | 159.1 | 167.3 | 172.2 | 185.6 | 193.1 | 204.9 | + 4.0 | + 8.8 |
|  | Tobacco products. | 210.0 | 220.9 | 225.3 | 232.1 | 243.4 | 258.1 | + 4.9 | +6.0 |
| 11 | Iron and steel products | 156.6 | 174.5 | 191.0 | 215.2 | 239.1 | 252.9 | $+11.1$ | + 5.8 |
|  | Textile prodacts......... | 152.1 | 167.7 | 188.0 | 203.3 | 220.6 | 233.0 |  | +5.6 |
| 13 | Non-ferrous metal produets ${ }^{1}$........ | 156.3 | 158.8 | 159.8 | 174.2 | 186.9 | 195.6 | + 7.3 | +4.7 |
| 14 | Clothing products. | 134.8 | 141.9 | 150.3 | 163.4 | 171.2 | 178.6 | + 4.8 | + 4.3 |
|  | Non-metallic mineral producta ${ }^{1}$ | 213.2 | 232.5 | 235.0 | 268.2 | 286.9 | 396.6 | + 7.0 | +3.4 |
| 116 | Wood products ${ }^{2} . . . . . . . . . . . . . .$. | 144.9 | 158.6 | 167.3 | 174.3 | 181.7 | 186.0 | +4.2 +4.2 | + 2.4 |
|  | Leather producta | 126.9 | 130.8 | 132.1 | 137.3 | 135.2 | 136.9 | -1.5 | + 1.3 |
| 17 | Totals, non-durable manufacturing . . | 173.6 | 183.5 | 194.9 | 211.2 | 224.1 | 240.3 | $+6.1$ |  |
|  | Totals, durable manufacturing...... | 158.9 | 178.5 | 182.9 | 212.7 | 237.2 | 254.7 | $+11.5$ | $+7.4$ |
|  | All Manufacturing Industries | 166.9 | 181.2 | 193.9 | 211.3 | 230.1 | 245.9 | +8.6 | + 7.3 |

${ }^{1}$ Durable manulactures; other groups are non-durabie.

## Industry Selling Price Indexes

The most comprehensive, regularly published estimate of price changes in manufacturing is an unweighted average of industry selling price indexes which is issued monthly. There are currently 102 such indexes, each based on prices of a representative "basket" of products of a particular manufacturing industry. (They thus relate to gross rather than net production as defined in connection with the volume of manufacturing production.) Although the average of these is not a scientific, weighted measure of price changes in manufacturing, it gives some over-all indication of the direction and extent of price movements. The unweighted annual average of industry selling price indexes ( $1956=100$ ) is as follows for years which they have been issued:--

| 1858. | 100.0 | 1960. | 102.7 | 1984. | 108.2 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1957. | 101.7 | 1961. | 103.0 | 1965. | 109.1 |
| 1958 | 101.4 | 1962. | 104.1 | 1966. | 111.80 |
| 1959. | 102.4 | 1963. | 106.7 |  |  |

## Subsection 2.-Distribution of Manufacturing by Province and by Metropolitan Area

## Distribution by Province

Ontario and Quebec together accounted for 81.3 p.c. of the value added by manufacture in Canada in 1964 -Ontario for 52.2 p.c. and Quebec for 29.1 p.c. British Columbia was responsible for 8.4 p.c., the Prairie Provinces for 6.7 p.c., and the Atlantic Provinces for 3.6 p.c. In Ontario, value added by manufacture averaged $\$ 1,073$ per capita of the population, in Quebec \$708, in British Columbia \$635, in the Prairie Provinces $\$ 271$ and in the Atlantic Provinces \$249; these averages compare with a national average of $\$ 704$.

Norts-Based on the revised atandard industrial classification and new establishment and total activity concepta,

| Province or Territory and Year | Estab-lisbmenta | Mantactoring Activity ${ }^{1}$ |  |  |  |  |  |  | Total Activity |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Production and Related Workers |  |  | Cost of Fuel and Electricity ${ }^{2}$ | Cost of Materials and Supplies Used | Vaiue ofShip-menteof Goodsof OwnManu-factnre | Value Added | Working Owners and Partnera |  | Totsl Employees: |  | Total Value Added ${ }^{4}$ |
|  |  | Number | ManHours Paid | Wages |  |  |  |  | Number' | With. drawala | Number | Salaries and Wages |  |
|  | No. |  | '000 | \$ ${ }^{*} 000$ | \$'600 | \$'000 | \$ ${ }^{+000}$ | \$'000 |  | \$'000 |  | \$ 000 | \$ 000 |
| Newfoundland............... . . . . . . . 1961 | 388 | 7,809, | 18,313 | 26,671 | 7,035 | 60,177 | 135,803 | 89, 273 | 231 | 458 | 9,854 | 36,310 | 70,644 |
| 1962 | 330 | 7,698 | 17,032 | 27,000 | 7.455 | 67.020 | 143, 859 | 72, 805 | 241 | 427 | 9,894 | 37,449 | 75,211 |
| 1963 | 307. | 8,001 | 17,251 | 27,613 | 7,626 | 72,050 | 155,208 | 73,977 | 192 | 339 | 10,021 | 38,093 | 78,964 |
| 1964 | 299 | 7,921 | 17,046 | 28,882 | 8,304 | 78,846 | 165,801 | 78,98\% | 180 | 319 | 9,935 | 39,867 | 82,770 |
| Prince Edward Ifland. . . . . . . . . . . . . 1981 | 161 | 1,307 | 2,763 | 2,949 | 472 | 21,483 | 30,598 | 8,480 | 111 | 281 | 1,681 | 4,105 | 8,784 |
| 1962 | 156 | 1,422 | 3,088 | 3,360 | 602 | 24,864 | 35,113 | 9,862 | 104 | 277 | 1,832 | 4,843 | 10,101 |
| 1963 | 147 | 1,455 | 3,018 | 3,488 | 605 | 24.798 | 35,599 | 10,608 | 103 | 252 | 1,863 | 5,019 | 11,314 |
| 1964 | 148 | 1,817 | 3,433 | 4,353 | 720 | 28,616 | 40,662 | 11,984 | 104 | $\checkmark$ | 2,113 | 6,290 | 12,414 |
| Nova 8cotia, . . . . . . . . . . . . . . . . . . . . 1961 | 1,028 | 21,247 | 44,350 | 66,386 | 10,050 | 211,094 | 381,435 | 181,183 | 599 | 1,415 | 27,822 | 94,268 | 185,408 |
|  | 1,029 | 22,694, | 48,107 | 73,233 | 11,081 | 242,480 | 426,366 | 174,407 | 618 | 1,474 | 29,375. | 102,917 | 179,350 |
| 1963 | 1,009 | 21,949 | 48,500 | 76,626 | 11,046 | 261, 974 | 458,915 | 187,905, | 576 | 1,428 | 28,648 | 106,956 | 193,235 |
| 1964: | 981 | 28,167 | 51, 165 | 84.581 | 12,501 | 303,146 | 523,738 | 211,140 | 578 | 1,480 | 30,183 | 117,654 | 218,292 |
| New Branswick ................ . . . . . 1961 | 733 | 17,284. | 36,200 | 53,337 | 15,228 | 221,582 | 390,573 | 154,915 | 389 | 932 | 22,932 | 76,796 | 161,104 |
| 1962 | 721 | 17,746 | 38,568 | 58,485 | 15,528 | 229.245 | 400,911 | 158,289 | 3981 | 1,058 | 23,303 | 88,798 | 184.810 |
| 1083 | 715 | 18,262 | 39,928 | 62,666 | 16,508 | 275,519 | 456.248 | 167,667 | 389 | 1,028 | 24,039 | 88.288 | 175,719 |
| 1964 | 724 | 18,481 | 40, 145 | 64,794 | 17,696 | 288,433 | 494,361 | 188,990 | 353 | 1,072 | 24,552 | 98,016 | 198,030 |
| Quebee. . . . . . . . . . . . . . . . . . . . . . . . . 1961 | 11,217 | 319,23t | 676, 489 | 1,087, 610 | 156,722 | 3,707,062 | 7,022,190 | 3,188,05 2 | 6,060 | 20,940 | 452,543 | 1,775,710 | 3,313,604 |
| 达 1982 | 11, 102 | 326, 257 | 704,13t | 1,166, 738 | 160, 521 | 4,038, 363 | 7,589, 429 | 3, 433,606 | 6, 134 | 21,658 | 459,926 | 1,882,187 | 3,582, 684 |
| 1963 | 10,980 | 328,495 | 708,138 | 1,208,471 | 167,762 | 4,354,652 | 8,072,507 | 3,568, 875 | 5,675. | 20,905 | 462,014 | 1,956,758 | 3,724,337 |
| 1964 | 11,097 | 342,907 | 742,774 | 1,318,999 | 185,318 | 4,702,130 | 8,773,944 | 3,937, 818 | 5,502 | 20,901 | 479,518 | 2,117,086 | 4, 125,329 |
| Ontario................................ 1981 | 12,419 | 433,059 | 912,762 | 1,739,097 | 237,405 | 6,129,239 | 11,563,734 | 5,244, 846 | 5,973 | 22,157 | 638,757 | 2,859,652 | 5,553,191 |
| 1982 | 12,585 | 456,026 | 968,220 | 1,908,474 | 249.459 | 6,944, 729 | 12, 219.454 | 5,815, 088 | 6,044 | 23,115 | 662,533 | 3,078,549 | 6,149, 611 |
| 1963 | 12,489, | 478.370 | 1,019,058 | 2,080,555 | 260.511 | 7,745,076 | 14,262,208 | 6,369, 483 | 5,726. | 22,999, | 690,470 | 3,335,582 | 6.729,111 |
| 1984 | 12,781. | 509,758 | 1,092,937 | 2,320,944 | 283.935 | 8,627,975 | 15,842,948 | 7,066,985 | 5,865 | 23,59] | 728,936 | 3, 866, 810 | 7,489,116 |
| Manitoba. . . . . . . . . . . . . . . . . . . . . . . . 1961 | 1,476 | 28,795 | 59.082 | 98,266 | 15,927 | 419,541, | 716,740 | 284,656 | 747 | 2,556 | 41,856 | 160,315 | 294,8t6 |
| 1962 | 1,458 | 29.054 | 00.710 | 104,108 | 16, 440 | 434,814 | 753,240 | 302,885 | 743 | 2,473 | 41,943, | 167, 229 | 314,452 |
| 1963 | 1,455 | 30.044 | 62,857 | 109,057 | 16,732 | 481,189 | 793,746 | 320,675 | 693 | 2.471 | $43,119$. | 174, 143 | 334, 834 |
| 1964 | 1,471 | 31.506 | 65,765 | 116.686 | 16,618 | 506,648 | 861,356 | 340,82t | 683 | 2,424 | 44,850 | 184, 809 | 357, 272 |
| Saskatchewbr.......... . . . . . . . . . . . . 1961 | 710 | 8.848 | 18,041 | 33,029, | 7,792 | 213,881 | 331,863 | 113,279 | 389 | 1,297 | 13,555 | 54,787 | 117,320 |
| 1982 | 720 | 8.717 | 18,331 | 34,645 | 8,200 | 228,747 | 352,069 | 118,750 | 400 | 1,348 | 13,662 | 57,560 | 118,519 |
| 1963 | 749 | 8,768 | 18,192 | 35,906 | 8.201 | 237,720 | 370.512 | 126,495 | 400 | 1,300 | 13,744 | 59,841 | 133,475 |
| 1984 | 773 | 9,1351 | 19,345 | 38,566. | 8,650 | 245,543 | 381,781 | 128,354 | 394 | 1,340 | 14,2471 | 64,273 | 136,137 |



| Province and Induatry Group | Eetab-lishments | Manufactubina Activity |  |  |  |  |  |  | Total Activity |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Production and Related Workers |  |  | Cost of Fuel and Electricity ${ }^{2}$ | Cost of Materials and <br> Supplies Used | Value of Shipmenta of Goods of Own Manufacture | Value Added | Working Owners and Partners |  | Total Employees ${ }^{\text { }}$ |  | Total Value Added ${ }^{4}$ |
|  |  | Number | ManHours Paid | Wages |  |  |  |  | Number | With drawals | Number | Salariea and Wages |  |
|  | No. |  | '000 | P'000 | \$’000 | \$'000 | \$'000 | $\$$ |  | \% 000 |  | \$ 000 | \$'000 |
| Frince Eal ward Island-concluded |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Wood industries......................... | 34 | 56 | 137 | 149 | 17 | 248 | 606 | 341 | 37 | 6 | 64 | 193 | 360 |
| Furniture and fixture industries......... | 2 |  |  | $s$ | 5 |  |  |  |  | 5 |  |  | + |
| Paper and allied industries............. | 1 | 5 | 5 | 5 | 8 | 6 | 6 | 6 | 5 | 5 | ' | 5 | 1 - |
| Printing, publishing and allied industries | 7 | * | ${ }^{*}$ | 5 | 5 | 6 | ' |  | $s$ | 5 | * | 5 | 5 |
| Primary metal jndustries................ | 1 | $s$ | 5 | 5 |  | $\checkmark$ |  |  |  | 5 | - | 6 | * |
| Metal fabricnting industries (except machinery and transportation equipment industries) <br> Transportation equipment industries | 2 | - | - |  |  | 5 |  |  |  | 6 |  | 5 | $s$ |
|  | 9 | 138 | 300 | 692 | 18 | 1,0501 | 1,748 | 688 | 5 | 8 | 181 | 883 | 681 |
| Non-metallic mineral products induetries | 4 | 18 | 30 | 36 | 7 | 27 | 143 | 111 | 1 | $\checkmark$ | 24 | 63 | 113 |
| Chemical and chemical products industries. | 4 | 39 |  | 108 |  | 2,069 | 2,305 |  | 1 | $B$ |  | 165 | 289 |
| Mibcellaneous manufacturing industries. | 4 |  |  |  |  |  |  | 5 - |  | 5 |  |  |  |
| publiahed.. | +** | 194 | 427 | 532 | 63 | 1,876 | 3,995 | 2,035 | 17 | 75 | 311 | 942 | 2,137 |
| Nova Scotia |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Food and beverage industries. | 317 | 6,947 | 15,380 | 18,213 | 8,100 | 106, 366 | 162,35] | 54,117 | 151 | 496 | 9,555 | 28,696 | 57,730 |
| Leather industries.. | 2 |  |  | $\stackrel{\square}{5}$ |  |  |  |  |  |  |  |  |  |
| Knitting mills. | 7 | $\checkmark$ | 6 | 6 |  | - | - |  | 5 | 5 |  |  | 6 |
| Clothing jndustries | 10 | 329 | 645 | 571 | 52 | 1.743 | 2,730 | 1.010 |  |  | 372 | 729 | 1,012 |
| Wood industries... | 299 | 2,020 | 4,517 | 4,901 | 579 | 10,353 | 22,071 | 11,242 | 255 | 452 | 2,390 | 6,144 | 11,768 |
| Furniture and fixture industries. | 37 | 220 | 488 | ${ }^{437}$ | 31 | 968 | 2,085 | $1+107$ | 28 | 79 | 268 | 718 | 1,127 |
| Paper and allied industries. | 9 | 1,634 | 3,622 | 7,115 | 2.733 | 20.944 | 46,910 | 23,413 | - | - | 2,070 | 9.766 | 23,869 |
| Printing, publishing and allied industries | 72 | . 791 | 1,642 | 3,061 | -182 | 2,865 | 13.916 | 10,939 | . 25 | 102 | 1.438 | 5,694 | [1,194 |
| Primary metal industries . . . . . $+\ldots+\ldots$ | 6 |  | $\bullet$ - | $5{ }^{5}$ | $s$ |  | 8 | - | 5 | 5 | 5 |  |  |
| Metal fabricating industrieg (except machinery and transportation equipment industries) | 49 | 1,224 | 2,680 | 4,995 | 628 | 12,040 | 23,051 | 10,818 | 16 | 6 | 1,618 | 6,734 | 11,685 |
| Machinery industries (except electrical | 4 |  |  | 4.905 |  |  |  | 10,818, |  |  | 1,618 |  |  |
| machinery)........................ | 6. | 265 | 850 | 1.010 | 73 | ${ }^{781}$ | 2, 843 | 1,918 | 1 | * 180 | 419 | 1,913 | 1,918 |
| Transportation eguiprnent industries... | 72 3 | 8,963 | 8,418 | 16.618 | ${ }_{6} 849$ | ${ }_{5}^{30,057}$ | 59,027 | ${ }_{5}^{28,238}$ | ${ }^{61}$ | ${ }^{8} 160$ | $4_{6}^{4} 691$ | 20,341 | 28,057 |
| Electrical products industries..... ...... | 3 | 6 | - | 5 | $\checkmark$ | 5 | - | 5 | 6 | 6 | 6 | 5 | . |
| tries | 28 | 351. | 778 | 1.176 | 439 | 2,085 | 5,392. | 2,810 | 10 | 26 | 485 | 1,742 | 2,830 |


| Pet | 2 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 5 | 5 | 5 | 6 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Chemical and chemical products industries. | 15 | 122 | 257 | 453 | 117 | 3,309 | 6,287 | 2,879 | 2 |  | 289 | 1,339 | 3,370 |
| Miscellaneous manufacturing industries.. | 40 | 180 | 379 | 532 | 71 | 792 | 2,014 | 1,151 | 19 | 77 | 237 | 782 | 1,403 |
| Industry groups for which data cannot be published. | ** | 5,092 | 11,880 | 25,401 | 3,670 | 110,845 | 175,262 | 61,495 | 8 | 23 | 6,383 | 33,056 | 62,850 |
| New Brunswlck |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Food and beverage industries. | 251 | 5,547 | 11,887 | 14,430 | 2,972 | 120,891 | 177,444 | 50,810 | 117 | 369 | 7,849 | 23,608 | 54,540 |
| Leather industries. | 4 |  |  |  |  |  |  |  |  |  |  |  |  |
| Textile industries. | 10 | 5 | 5 | 5 | 5 | 6 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Knitting mills. | , | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 6 | 5 | 5 |
| Clothing industrie | 5 | 5 | 5 | 5 | 5 | 5 | $5^{5}$ | 5 |  | 5 | 5 | 5 | 5 |
| Wood industries.. | 227 | 2,907 | 6,655 | 7,966 | 1,000 | 20,977 | 40,956 | 20,558 | 161 | 377 | 3,496 | 10,071 | 21,536 |
| Furniture and fixture industri | 20 |  |  |  |  |  |  | 5 |  |  |  |  |  |
| Paper and allied industries. | 19 | 4,038 | 8,673 | 20,425 | 10,717 | 66,878 | 134,128 | 56,719 | 1 | 5 | 4,838 | 25,738 | 58,988 |
| Printing, publishing and allied industries | 45 | 615 | 1,249 | 2,253 | 120 | 2,326 | 9,250 | 6,778 | 8 | 25 | 1,004 | 3,823 | 6,828 |
| Primary metal industries ${ }^{7}$............. | 3 | 41 | 84 | 113 | 10 | 105 | 317 | 200 | - | - | 49 | 151 | 207 |
| Metal fabricating industries (except machinery and transportation equipment industries) | 38 | 868 | 1,880 | 3,747 | 254 | 7,301 | 17,329 | 9,572 | 16 | 111 | 1,223 | 5,342 | 10,013 |
| Machinery industries (except electrical machinery) | 3 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Transportation equipment industries.... | 11 | 5 | 5 | 5 | 5 | 5 | 6 | 5 | 5 | 5 | 5 | 5 | 5 |
| Electrical products industries. | 5 | 899 | 1,818 | 2,415 | 214 | 6,332 | 12,122 | 6,319 | - | - | 1,294 | 4,009 | 6,348 |
| Non-metallic mineral products industries | 32 | 531 | 1,168 | 1,998 | 945 | 2,860 | 9,678 | 5,831 | 10 | 33 | 658 | 2,644 | 6,017 |
| Petroleum and coal products industries. . | , | 5 |  |  |  |  |  |  |  | 5 |  |  |  |
| Chemical and chemical products industries. | 11 | 162 | 357 | 694 | 507 | 5,436 | 9,267 | 3,579 | 1 | 5 5 | 267 | 1,236 | 3,862 |
| Miscellaneous manufacturing industries. | 38 | 398 | 844 | 1,312 | 74 | 2,593 | 5,625 | 3,228 | 18 | 97 | 538 | 2,038 | 3,327 |
| Industry groups for which data cannot be published | ... | 2,475 | 5,533 | 9,441 | 824 | 52,734 | 78,244 | 25,395 | 21 | 5 | 3,336 | 14,357 | 26,364 |
| Quebec |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Food and beverage industries. | 2,300 | 33,819 | 74,123 | 120,111 | 20,934 | 1,050,118 | 1,629, 268 | 556,590 | 1,296 | 4,974 | 57,086 | 234,316 | 586,647 |
| Tobacco products industries. | 21 | 5,670 | 10,999 | 25,142 | 663 | 103,905 | 193,472 | 91,438 |  |  | 7,180 | 34,261 | 93,917 |
| Rubber industries. | 30 | ${ }^{5}$ |  |  | 5 |  |  |  |  | 5 |  |  |  |
| Leather industries. | 284 | 13,766 | 28,058 | 38,291 | 843 | 73,205 | 149,632 | 76,577 | 91 | 404 | 16,033 | 50,110 | 77,136 |
| Textile industries. | 428 | 35,212 | 78,378 | 118,738 | 10,202 | 392,309 | 702,401 | 311,736 | 119 | 704 | 45,022 | 175,279 | 317,201 |
| Knitting mills. | 220 | 10,599 | 23,132 | 29,249 | 1,062 | 92,170 | 155,998 | 65,911 | 38 | 178 | 12,176 | 37,787 | 65,967 |
| Clothing industries | 1,562 | 52,734 | 105,662 | 140,975 | 2,070 | 357,689 | 644,321 | 291,810 | 638 | 2,874 | 61,257 | 188,352 | 293,180 |
| Wood industries. | 1,452 | 17,055 | 39,478 | 50,979 | 4,732 | 129,062 | 242,692 | 113,001 | 1.128 | 2,653 | 19,674 | 64,320 | 116,969 |
| Furniture and fixture industries | 741 | 11,864 | 26,385 | 39,170 | 1,767 | 84,103 | 169,798 | 86,095 | 508 | 1,779 | 14,620 | 53,261 | 87,921 |
| Paper and allied industries. | 209 | 30.377 | 68,755 | 155, 178 | 58,166 | 452,275 | 958,983 | 450,365 | 26 | 87 | 39,433 | 216,487 | 454,642 |
| Printing, publishing and allied industries | 1,002 | 12,090 | 25,111 | 58,045 | 1,742 | 92,937 | 272,582 | 178,675 | 529 | 2,533 | 20,640 | 102,153 | 181,107 |
| Primary metal industries ${ }^{7}$... | 105 | 15,905 | 35,188 | 85,113 | 31,367 | 354,629 | 670,883 | 287,498 | 20 | 83 | 22,676 | 130,707 | 300,370 |
| Metal fabricating industries (except machinery and transportation equipment industries) | 874 | 23,725 | 51,236 | 106,153 | 5,638 | 275,600 | 540,764 | 263,117 | 410 | 1,719 | 31,494 | 154,725 | 272,394 |
| Machinery industries (except electrical machinery) | 109 | 7,041 | 15,711 | 31,210 | 1,322 | 91,487 | 184,690 | 91,758 | 7 | 5 | 12,860 | 65,486 | 104,061 |


| Province and Industry Group | Estab-litahment | Manupactioring Activity ${ }^{\text {a }}$ |  |  |  |  |  |  | Toral Activity |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Production and Related Workers |  |  | Cost of Fuel and tricity | Coot of Materialo and Supplies Used | Value of Shipments of Goods of Own Manufacture | Value <br> Added | Working Owners and Partners |  | Total Employees: |  | Total Added ${ }^{\text {Value }}$ |
|  |  | Number | Man- <br> Hoara <br> Paid | Wares |  |  |  |  | Number | Withdrawals | Namber | Salaries and Wages |  |
|  | No. |  | '000 | \%'000 | \$ 000 | \$000 | 8000 | \$ 000 |  | \$'000 |  | \$'000 | \$'000 |
| Queliee-concluded |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Traneportation equipment industries.... | 122 | 16,490, | 35,940 | 81,397 | 3,497 | 181.234 | 376,807 | 194,509 | 55 | 191. | 24,784 | 134,372 | 204.153 |
| Electrical products industries.......... | 125 | 15,781 | 34, 832 | 70,314 | 3.545 | 209, 411 | 421,347 | 214,868 | 7 | 32 | 29,275 | 154,179 | 285,452 |
| Non-metalic mineral products industries | 398 | $\pm 0,716$ | 24,694 | 48,305 | 16,870 | 100,311 | 267.868 | 150.049 | 188 | 557 | 15,007 | 72.776 | 162,614 |
| Petroleum and coal products industries. Chemical and chemical products industries. . | 16 346 | 1,813 10,742 | 3,929 23,047 | 11,713 49,308 | 2,883 | 321,492 205,360 | 390,825 498,594 | 74,391 279,389 |  | 214 | 2,981 23,666 | 20,259 132,940 | 74,765 300,519 |
| Miscellaneous manuiacturing industries.. | 753 |  |  | 4, 308 |  | 20,300 |  |  |  |  |  | , |  |
| published. | ... | 17,508 | 38,116 | 59.611 | 3,360 | 134,829 | 296.019 | 160,038 | 391 | 1,871 | 23,854 | 95,316 | 166,817 |
| Ontario |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Food and beverage industries | 2,583 | 51,540 | 111,546 | 203,628 | 35,073 | 1,601,280 | 2,543,314 | 923, 606 | 1,495 | 5,826 | 88,803 | 390,828 | 963,514 |
| Tobacco products induatries. |  | 2.549 | 5,040 | ${ }^{9} .146$ | 646 | 114,971 | 155,339 | 44,425. |  |  | 3,417 | 14,002 | 45,249 |
| Rubber industries. | 52 | 11,818 | 25, 880 | 57,947 | 4,737 | 157,383 | 317.750 | 161,098 | 3 |  | 16,457 | 85,988 | 169,421 |
| Textile industries. | 374 | - 21.127 | - 44,716 | 75,509 | 6,926 | - 243,812 | 163,106 | ${ }^{2} 80.8725$ | $\begin{array}{r}65 \\ 153 \\ \hline\end{array}$ | 230 | 14,887 26,236 | 105, 654 | - 211,869 |
| Knitting mills. | 123 | 7.602 | 16.316 | 21,582 | 883 | 56,021 | 102.095 | 47.448 | 28 | 107 | 8,917 | 29,161 | 47,443 |
| Clathing industries | 548 | 20,290 | 40,339 | 59,152 | 852 | 120.550 | 239,680 | 121.628 | 244 | 1,313 | 23,931 | 78,876 | 123,121 |
| Wood industries. | 888 | 14,069 | 31,337 | 48.166 | 8,926 | 111,461 | 221.040 | 108.884 | 588 | 1,719 | 17,001 | 63, 365 | 111,575 |
| Furniture end fixture indus | 922 | 14. 421 | 31,444 | 53.514 | 2,155 | 112.973 | 232.562 | $119.24{ }^{8}$ | 670 | 2,482 | 18.041 | 74, 144 | 120.651 |
| Paper and allied industrieal........... | 267 | 30.751 | 67,085 | 152,182 | 42.054 | 468.542 | 950.226 | 441.858 | 26 | 138 | 40,805 | 217,385 | 449,664 |
| Printing. publishing and allied industries | 1,453 | 21,973 | 45.237 | 112,824 | 3.646 | 171.817 | 524,192 | 351, 432 | 725 | 3,292 | 38,677 | 209,227 | 358.952 |
| Primary metal industries ${ }^{7}$. | 204 | 48,971 | 104.056 | 289,986 | 57,913 | 755,647 | 1,498,167 | 680, 441 | 33 | 150 | 61.147 | 355,248 | 697, 35\% |
| Metal fabricating industries (except machinery and transportation equipment industries). | 1,738 | 51,589 | 111,455 | 240,942 | 14,961 | 629,057 | 1,265,266 | 629,735 | 634 | 2,945 | 69,481 | 351,937 | 655,875 |
| Machinery industries (except electrical |  |  |  |  |  |  |  |  |  |  |  |  |  |
| machinery)..................... | 392 | 26,908 | 57,737, | 139,513 | 6,091 | 385,885 | 787.834 | 397,208 | 59 | 310. | 43,511 | 241,680 | 531,569 |
| Transportation equipment industries | 319 | 61, 815 | ${ }_{\text {135, }}^{135} 9$ | 347,601 | 16.528 <br> 9 | -721,963 | 2,616,247 | ${ }_{6} 920.077$ | ${ }_{25}{ }^{5}$ | 202 | 70,842 | 350, 560 | 985,479 652,868 |
| Non-metallic mineral products industries | 532 | 17.655 | 38,681 | 1959,360 84,380 | - ${ }^{9} 778$ | 589,377 | $\xrightarrow{1+201,338}$ | 255,609 | 164 | 202 | 23,904 | 122.091 | 263,835 |
| Petroleum and cosl products industries. | 25 | 2,316 | S,048 | 14.402 | 3,757 | 381.813 | 486,896 | 95.761 | - | -- | 6,898 | 49,767 | 94,436 |
| Chemieal and chermical producta in- |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Miscellaneous manufacturing industries. | 1,216 | 27,225 | 57.113 | 101, 124 | 4,937 | 244, 893 | $\begin{aligned} & 1,080,208 \\ & 639,987 \end{aligned}$ | $\begin{aligned} & 0007,102 \\ & 207,192 \end{aligned}$ | 563 | 2,769 | 38,253 | 169,910 | 331.929 |


| Maniteloa |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Food and beverage industries. | 379 | 6,918 | 14,544 | 27,791 | 4,403 | 241,620 | 343,868 | 96,496 | , 189 | ${ }^{724}$ | 11.312 | 48,890 | 104,233 |
| Rubber industries....... . . . . . | 2 | $\stackrel{ }{*}$ | 5 | ${ }^{5}$ | 5 - 40 |  |  | - 060 | - 7 | $5{ }^{5}$ |  |  | 5 ${ }^{1} 861$ |
| Leather industries. | 16 | ${ }_{6}^{664}$ | 1,373 | 1,859 | 48 | 4.806 | 8.238 | 3, 688 | ${ }^{7}$ | ${ }^{26}$ | ${ }^{742}$ | 2, 257 | 3,661 |
| Textile industries. | 39 | ${ }_{5}{ }^{543}$ | 1,108 | 1,345 | - 86 | ${ }^{7,265}$ | 11,094 | ${ }^{3,770}$ | 515 | ${ }^{81} 8$ | ${ }^{6} 955$ | 1,849 | ${ }_{5}^{3,838}$ |
| Knitting mills..... | 129 | 5, 588 |  | 13,391 | ${ }^{507}$ | 34,536 | 60.696 | 26, 898 | 531 | 137 | 6,270 | 16.771 | 26,818 |
| Clothing industries | 129 | 5, 9888 | 11,292 2,188 | 13,391 2,932 | 207 286 | 34,586 6,191 | 60,696 12,767 | 26,838 6,397 | 112 | 224. | 1,187 | 3.947 | 26,818 6.888 |
| Wood industries............ | 127 | $\begin{array}{r}9.98 \\ 1.515 \\ \hline\end{array}$ | 2, 188 | 2,932 | 286 | 6, 191 | 12,767 | - ${ }_{\text {6, }}$ 10,648 |  |  |  |  | 6,886 11,038 |
| Farniture and fixture indus | 117 | 1.515 | 3,264 | 5.055 | 223 | 13,586 | 24,230 | 10,648. | 76 | 246 | 1,910 | 7,001 | 11,038 |
| Paper snd atlied industries | 25 | 1.370 | 2,962 | 5.698 | 1,963 | 23,974 | 80,972 | 28.281 | - 102 | - | 1,778 | 8.074 | 25,501 |
| Printing. publishing and ellied industries | 202 | 2.279 | 4,772 | 9,885 | 372 | 13,598 | 44, 178 | 30.289 . | 102 | 395 | 3,889 | 17,280 | 30,508 |
| Primary metal industries ${ }^{7}+\ldots \ldots \ldots \ldots$. | 14 | 2.408 | 4,666 | 11.113 | 4.581 | 15,494 | 42, 425. | 22.211 | - | - | 2.839 | 14,080 | 22.644 |
| Metal fabricating industries (except machinery and transportation equipment induatries). | 130 | 2,926 | 6. 168 | 12,518 | 647 | 30,591. | 59.584 | 27,669 | 52 | 185 | 3,948 | 18,279, | 29,145 |
| Machinery industries (except electrical machinery) | 37 | 1.472 | 3,027 | 5.468 | 257. | 20,277 | 35,139 | 15,890. | 3 | 17 | 2,184 | 9.898 | 18,940 |
| Transportation equipment industries... | 28 | 1,582 | 3,464 | 6,258 | 445 | 13,558 | 29, 208 | 15,668 | 10 | 28 | 2,434 | 10,741 | 18,030 |
| Electrical products industries. | 18 | 654 | 1,398 | 2.338 | 162 | 10,718 | 18,725 | 7,909 | 5. | 13 | 1,160 | 5,035 | 8,192 |
| Non-meteltic mineral produets industries | 59 | 1,028; | 2,134 | 4.517 | 2,085 | 10,291 | 29,438 | 17,264 | 14. | 67 | 1,482 | 7,026 | 17,898 |
| Petroleum and coal products industries ${ }^{\text {s }}$. | , | 330 | 713 | 1.962 | 528 | 44,265 | 58,211 | 14.210 | - | - | 770 | 3,930 | 14,648 |
| Chemical and ohemical products indastries. . | 37 | 359. | 740 | 1.316 | 190 | 10,733 | 20,187 | 9.516 | 2 | 6 | 847 | 3,885 | 11,471 |
| Miscellaneous manafacturing industries.. | 103 | 757 | 1,621 | 2,686 | 111 | 4,125 | 10,265. | 6.033, | 64 | 272 | 1,027 | 4,113 | 6,631 |
| Industry groups for which data cannot be published |  | 150 | 331 | 388 | 38 | 1.049 | 2.140 | 1,016 | 1 | I | 416 | 1,691 | 1,080 |
| Saslcatchewan |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Food and beverage industries | 256 | 3,517 | 7,445 | 14,982 | 2,645 | 136,998 | 184,488 | 35,294 | 101 | ${ }^{3} 398$ | 6,021 | 26,220 | $88,471$ |
| Textile industries. | 8 | 56 | 124 | 162 | ${ }^{6}$ | 707 | 1,077 | ${ }^{365}$ |  |  | 82 299 | 250 | $\begin{array}{r} 458 \\ 1.844 \end{array}$ |
| Clothing industries | ${ }^{6}$ | 224 | - 487 | ${ }^{625}$ | 16 | 1,904 | 3, 655 | 1,601 |  |  | - 299 | 1,165 | 1,844 |
| Wood industries. | 132 | 898 | 1, 862 | 2,931 | 392 | 6,210 | 13, 184 | 6,410 | 103 | 163 | 1,165 | 4,064 | 7.237 |
| Furniture and fixture industri | 37 | 76 | 156 | 244 | 14 | 539 | 1,122 | 601 | 30 | 93 | ${ }^{81}$ | 302 | 801 |
| Paper and allied industries............. | 6 | 158 | 344 | 638 | 177 | 2.102 | 3.969 | 1,636 | 8 | ${ }^{6}$ | 185 | 834 | 1.612 |
| Printing, publishing sud allied industries | 124 | 873 | 1.785 | 3,910 | 198. | 4,009 | 15,489 | 11,276 | $\times 78$ | ${ }_{5} 298$ | 1,432 | 6,340 | ${ }_{5}^{11,467}$ |
| Primary metal industries............... | 4 | 8 |  |  |  |  |  | 5 | $\checkmark$ | \$ | , | $\square$ | 5 |
| Metal fabricating industries (except machinery and trassportation equipment industries). | 60 | 745 | 1,531 | 2,923 | 182 | 9,606 | 17,613 | 7,949 | 31 | -. 128 | 1,038 | 4,512 | 8,772 |
| Machinery induatries (except electrical machinery) | 19 | 202 | 434 | 830 | 52. | 2,207 | 4,752 | 2,706 | 2 | 5 | 442 | 2,354 | 2,781 |
| Tranaportation equipment industries. . ${ }^{\text {a }}$ | 6 |  |  | 5 |  |  |  |  |  | - |  |  |  |
| Electrical producta industriea.... | 4. |  |  |  |  |  |  | 4 | 5 | c | 5 |  | ${ }^{5}$ |
| Non-metallic mineral products índustries | 41 | 584 | 1,276 | 2,329 | 1,103 | 7,132 | 18.327 | 9,513 | 14 | 53 | 781 | 3.289 | 10,032 |
| Petroleam and coal products industries ${ }^{\wedge}$. | 6 | 582 | 1,219 | 3.450 | 886 | 60,365 | 77,292 | 15,595 | $\sim$ | - | 787 | 4,970 | 15,900 |
| Chemical and chemical products industries. | 12 | 76 | 180 | 393 | 125 | 2, 610 | 3,595 | 1,580. |  |  | 171 | 894 | 2,405 |
| Miscellaneous manufacturing industries. | 48. | 217 | 449 | 692 | 37 | 1,299 | 3,129 | 1,813 | 29 | 179 | 290 | 1,037 | 2,033 |
| Industry groups for which dats cannot be published. | ** | 927 | 2.078 | 4.456 | 2,837 | 9,855 | 24,087 | 12.034 | 3 | 5 | 1,453 | 8.042 | 12.524 |

9.-Summary Statistics of Manufactures, by Province, 1961-64 and by Province and Industry Group, 1964-concluded

| Province or Territory and Industry Group | Estab-lishments | Manufacturing Activity ${ }^{1}$ |  |  |  |  |  |  | Total Activity |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Production and Related Workers |  |  | Cost of Fuel and Electricity ${ }^{2}$ | Cost of Materials and <br> Supplies Used | Value of Shipments of Goods of Own Manufacture | Value <br> Added | Working Owners and Partners |  | Total Employees ${ }^{3}$ |  | Total Value Added ${ }^{4}$ |
|  |  | Number | ManHours Paid | Wages |  |  |  |  | Number | Withdrawals | Number | Salaries and Wages |  |
|  | No. |  | '000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |  | \$'000 |  | \$'000 | \$ ${ }^{\prime} 000$ |
| Alberta |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Food and beverage industries. | 473 | 8,003 | 16,844 | 33,756 | 4,725 | 374,675 | 501,161 | 120,736 | 208 | 845 | 13,156 | 58,592 | 126,312 |
| Rubber industries.............. | 5 |  |  |  |  | 5 5 | 5 5 | 5 120,736 | 5 | 5 | ${ }_{5}{ }^{\text {a }}$ | 5 5 |  |
| Leather industries. | 7 |  | 5 | 5 |  | ${ }^{5}$ | 5 | 5 |  |  |  | 5 | 5 |
| Textile industries. | 20 | 316 | 717 | 1,348 | 148 | 5,577 | 9,180 | 3,466 |  | 40 | 431 | 2,094 | 3,479 |
| Knitting mills.. | 3 | 5 | 5 | 5. | 5 | 5. | 5. | 5 5, | 5 | 5 | 5 | 5. | 5.78 |
| Clothing industries. | 22 | 1,702 | 3,417 | 4,116 | , 50 | 10,102 | 20,649 | 10,848 | 7 | 14 | 1,907 | 5,929 | 10,778 |
| Wood industries.. | 297 | 3,675 | 7,878 | 12,089 | 1,771 | 28, 234 | 56,578 | 27,662 | 198 | 482 | 4,541 | 15,778 | 28,530 |
| Furniture and fixture industries | 102 | 730 | 1,546 | 2,624 | 113 | 6,021 | 11,502 | 5,411 | 85 | 299 | 885 | 3,514 | 5,572 |
| Paper and allied industries . . . . | 20 | 872 | 1,908 | 4,347 | 1,624 | 23,334 | 45,056 | 20,074 | - | - | 1,227 | 6,625 | 20,970 |
| Printing, publishing and allied industries | 201 | 1,642 | 3,417 | 7,813 | 316 | 10.255 | 36,570 | 26,002 | 89 | 450 | 2,877 | 13,397 | 25,931 |
| Primary metal industries ${ }^{7} . . . . . . . . . . . . .$. | 21 | 1,436 | 3,044 | 7,800 | 1,738 | 56,521 | 81,965 | 25,471 | 1 |  | 2,053 | 11,834 | 25,957 |
| Metal fabricating industries (except machinery and transportation equipment industries) | 189 | 3,457 | 7,130 | 15,493 | 722 | 41,879 | 80,832 | 38,791 | 56 | 238 | 4,846 | 22,907 | 45,111 |
| Machinery industries (except electrical machinery) | 26 | 501 | 1,036 | 2,087 | 220 | 8,986 | 15,319 | 6,587 | $-$ | 23 | 1,297 | 6,991 | 8,013 |
| Transportation equipment industries.... | 42 | 995 | 2,074 | 4,014 | 164 | 8,908 | 16,562 | 7,720 | 9 | 37 | 1,476 | 6,668 | 8,525 |
| Electrical products industries..... . . . . . | 10 | 265 | 516 | 836 | 70 | 5,992 | 9,908 | 4,158 | - | - | 451 | 1,723 | 4,225 |
| Non-metallic mineral products industries. | 98 | 2,577 | 5,465 | 11,384 | 2,884 | 25,529 | 70,931 | 43,030 | 15 | 52 | 3,261 | 15,503 | 43,485 |
| Petroleum and coal products industries. | 14 | 757 | 1,626 | 4,769 | 1,947 | 93,776 | 125,394 | 28,554 | 2 | 5 | 1,309 | 8,351 | 28,713 |
| Chemical and chemical products industries. | 38 | 1,240 | 2,771 | 6,964 | 4,187 | 31,290 | 84,811 | 50,393 | 3 | 10 | 2,141 | 12,828 | 53,091 |
| Miscellaneous manufacturing industries. | 158 | -656 | 1,358 | 2,360 | 133 | 4.103 | 10,024 | 5,865 | 95 | 513 | 948 | 3,720 | 7,831 |
| Industry groups for which data cannot be published. | $\cdots$ | 401 | 883 | 1,895 | 195 | 8,768 | 17,337 | 8,422 | 6 | 5 | 711 | 3,606 | 8,411 |
| British Columbia |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Food and beverage industries. | 681 | 10,021 | 20,045 | 42,976 | 6,325 | 312,867 | 488,097 | 167,462 | 306 | 1,235 | 17,222 | 78,610 | 176,215 |
| Rubber industries........ | 6 | 71 | 160 | 326 | 39 | 447 | 1,231 | , 734 | 1 | 5 | 275 | 1,463 | 902 |
| Leather industries........................ | 16 | 244 | 489 | 707 | 29 | 1,337 | 2,955 | 1,661 | 8 | 19 | 292 | 948 | 1,765 |
| Textile industries.. | 46 6 | $5_{5}^{667}$ | ${ }_{5}^{1,326}$ | 2,038 | $5_{5}^{136}$ | ${ }_{5} 6,250$ | ${ }_{6}^{11,215}$ | ${ }_{5} 4,933$ | 21 | ¢ 83 | ${ }_{5} 838$ | 3,067 | 5,009 |


| Clothing indus | 51 | 1,6891 | 3,2391 | 4,8931 | 87 | 9,2051 | 18,184: | 9.3031 | 12 | 37 | 1,92B | 8, 2701 | 9,288 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Wood industrie | 1,031 | 34,231 | 69,441 | 183, 815 | 14,790 | 456,028 | 781,349 | 324, 630 | 452 | 1,871 | 39,426 | 197, 776 | 327,640 |
| Farniture and fixture indust | 231 | 1, 857 | 8,312 | 6.467 | 238 | 13,647 | 27,532 | 13.935 | 161 | 594 | 2,088 | 8.822 | 14,875 |
| Paper and allied industries. | 48 | 9,677 | 20.184 | 58,097 | 21.587 | 185,906 | 440.788 | 237.440 | , |  | 13,121 | 84,181 | 289,229 |
| Printing, publishing and allied industries. | 306 | 2,528 | 5.038 | 13,842 | 488 | 16,640 | 62.464 | 45,557 | 112 | 484 | 4.852 | 23,580 | 45,911 |
| Primary metal industries ${ }^{7}$. | 39. | 5.494 | 11,841 | 31.62 B | 5,106 | 87,298 | 167.918 | 76,743 | 7. | 34 | 7.352 | 44,777 | 77,645 |
| Metal fabricating industries (except machinery and transportation equipment industries) | 364 | 5,171 | 10.521 | 25,518 | 1.402 | 63,392 | 128,819 | 64,418 | 111 | 441 | 7,098 | 37,144 | 67,393 |
| Machinery industries (except electrical machinery) | 57 | 1,794 | 3,672 | 9,472 | 403 | 22,601. | 46,052 | 23,795 | 5 |  | 2,990 | 16,983 | 25,013 |
| Transportation equipment industries.... | 132 | 3,745 | 7,636 | 20,303 | 557 | 37,738 | 76,769 | 38,664 | 60 | 178 | 5,063 | 28,620 | 40.797 |
| Electrical products industries.... | 35 | 843 | 1,761 | 3.658 | 228 | 14,144 | 28, 656 | 15,074 | 3. | 5 | 1,638 | 8.481 | 17.245 |
| Non-metallic mineral producte industries | 131 | 1,775 | 3,699 | 8,738 | 3,074 | 20.097 | 48, 298 | 25,152 | 44. | 142 | 2,423. | 12,799 | 26,599 |
| Petroletm and moal products industries ${ }^{\text {s }}$ | 8 | 665 | 1,425 | 4,199 | 1,458 | 102.248 | 127,529 | 24,577 |  | - | 1,184 | 8,019 | 25,473 |
| Chemical and chemiasl products industries. | 110 | 1, 680 | 3,577 | 8,281 | 3,937 | 41,788 | 89,513 | 45,776 | 3 | 35 | 3,051 | 15, 804 | 48,801 |
| Miscellaneoas manufacturing industries. . | 296 | 1,378 | 2,813 | 5,504 | 287 | 7, 143 | 19,913 | 12, 843 | 187 | 921 | 1,958 | 8,985 | 17,987 |
| Industry groupa for which data cannot be published | ** | 362 | 726 | 1,122 | 91 | 8,118 | 6,542 | 3,282 | 3 | 8 | 503. | 2,076 | 3,808 |
| Yuicom and Northmest Territorles |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Food and beverage industries. | 4 | 7 | 15 | 20 | 12 | 90. | 223 | 121. | - | - | 18 | 69 | 156 |
| Wood industries. | B | 35 | 72 | 121 | 28 | 181 | 650 | 458 | 1 | E | 51 | 179 | 481 |
| Printing, publishing and allied industries | 3. | 5 |  |  |  |  |  | 5 |  | * |  |  | 6 |
| Petroleum and cosl products industries. . | 1 | 5 | B | 8 | $s$ | 5 | $\sigma$ | 5 | $\stackrel{ }{ }$ | 5 | t | \% | 5 |
| industry groups ior which data cannot be published. | . | 67. | 166 | 414 | 20 | 1,523 | 3.018 | 1,388 | 1 | $\delta$ | 88. | 517 | 1,715 |

[^213]three eatablishments induded in "Industry groups for which data cannot be published"


Coil steel passing through an automatic shearing machine. A single button on the electronic programming panel activates the complete shearing cycle, producing the required number and size of sheets.

## Distribution by Metropolitan Area

The 16 census metropolitan areas* for which manufacturing statistics are given in Table 10 accounted in 1964 for manufacturing value added of $\$ 8,019,000,000$ and shipments of goods of own manufacture of $\$ 18,125,000,000$; the former was 59.2 p.c. and the latter 58.7 p.c. of the respective totals for all Canadian manufacturing industries. The proportions of total employees and of salaries and wages accounted for by these metropolitan areas were slightly lower. They had 855,716 employees, including those in non-manufacturing activity which was 57.4 p.c. of the total for Canada, and they paid total salaries and wages of $\$ 4,073,000,000$ to these employees, or 57.5 p.c. of the total.

Approximately half ( 51.1 p.c.) of all value added by manufacture in Canada was accounted for by the seven largest metropolitan areas, as ranked by the value of their shipments of goods of own manufacture. In descending order these were: Toronto, Montreal, Hamilton, Vancouver, Windsor, Winnipeg and Kitchener. These areas accounted for 50.4 p.c. of the shipments of goods of own manufacture, 49.7 p.c. of total employees and 50.1 p.c. of total salaries and wages of Canada's manufacturing industries.

[^214]10.-Summary Statistics of Manufactures, by Census Metropolitan Area, 1961-64

| Census Metropolitan Area and Year | Estab-lishments | Manufacturing Activity ${ }^{1}$ |  |  |  |  |  |  | Total Activity |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Production and Related Workers |  |  | Cost of Fuel and Electricity ${ }^{2}$ | Cost of Materials and Supplies Used | Value of Shipments of Goods of Own Manufacture | Value <br> Added | Working Owners and Partners |  | Total Employees ${ }^{3}$ |  | Total Value Added ${ }^{4}$ |
|  |  | Number | ManHours Paid | Wages |  |  |  |  | Number | Withdrawals | Number | Salaries and Wages |  |
|  | No. |  | '000 | \$'000 | \$ ${ }^{\prime} 000$ | \$ ${ }^{\prime} 000$ | \$'000 | \$'000 |  | \$'000 |  | \$'000 | \$'000 |
| Calgary, Alta....................... . . 1961 | 395 | 7,476 | 15,309 | 30,676 | 3,797 | 174, 947 | 274,974 | 97,380 | 162 | 605 | 11,195 | 48,909 | 100,966 |
| 1962 | 414 | 7,619 | 15,901 | 32,722 | 3,944 | 190, 178 | 299, 139 | 104,899 | 165 | 626 | 11,441 | 51,365 | 111,118 |
| $1963$ | 419 | 7,664 | 15,844 | 33, 325 | 4,086 | 204, 433 | 315, 211 | 108,247 | 156 | 620 | 11,616 | 53,781 | 115,710 |
| 1964 | 439 | 7,232 | 15,199 | 32,719 | 4,232 | 218,714 | 337,460 | 117,019 | 160 | 674 | 11,103 | 52,977 | 121,725 |
| Edmonton, Alta.................... 1961 | 484 | 11,805 | 24,555 | 47,592 | 7,273 | 267,003 | 433,395 | 158,673 | 181 | 724 | 17,076 | 74,053 | 166,487 |
| - 1962 | 514 | 12,455 | 26,090 | 51,376 | 7,770 | 296, 421 | 480,084 | 175, 880 | 201 | 777 | 17,878 | 79,857 | 184,310 |
| 1963 | 517 | 12,267 | 25,722 | 51,956 | 8,342 | 305,101 | 490,392 | 178,644 | 180 | 787 | 17,778 | 81,864 | 188, 535 |
| 1964 | 533 | 12,933 | 27,470 | 56,451 | 9,235 | 320,304 | 525,969 | 197, 180 | 177 | 786 | 18,541 | 88,326 | 208,730 |
| Halifax, N.S. . . . . . . . . . . . . . . . . . . . 1961 | 140 | 5,395 | 12,045 | 19,609 | 1,813 | 83,285 | 145,955 | 61,375 | 53 | 189 | 7,655 | 29,534 | 61,496 |
| , 1962 | 143 | 5,727 | 12,345 | 20,668 | 1,868 | 90,212 | 153, 303 | 61,845 | 55 | 199 | 8,045 | 31,218 | 63,228 |
| 1963 | 139 | 5,319 | 11,467 | 19,886 | 1,888 | 95,888 | 161,516 | 64,388 | 53 | 216 | 7,594 | 30, 496 | 65,957 |
| 1964 | 145 | 5,628 | 12,189 | 22,612 | 2,124 | 110,321 | 184,380 | 72,422 | 55 | 224 | 8,149 | 34,581 | 74,854 |
| Hamilton, Ont....................... . 1961 | 687 | 41,121 | 86,996 | 188,250 | 26,617 | 564, 409 | $1,168,105$ | 571,499 | 299 | 1,242 | 56,483 | 273, 247 | 584,735 |
| 1962 | 714 | 44,087 | 93,211 | 208,038 | 28,591 | 630,553 | 1, 279,597 | 636,162 | 339 | 1,306 | 59,376 | 301,515 | 649,584 |
| 1963 | 695 | 45,948 | 96,876 | 220, 811 | 31,396 | 679,026 | 1,391,844 | 691,009 | 310 | 1,237 | 61,954 | 319,244 | 707,163 |
| 1964 | 704 | 49,771 | 106,065 | 254,210 | 35,362 | 790,024 | 1,601,648 | 779,981 | 304 | 1,293 | 65,803 | 357, 162 | 798,217 |
| Kitchener, Ont................. . . . . 1961 | 460 | 22,972 | 49,008 | 82,490 | 5,480 | 238,502 | 467,900 | 220,296 | 171 | 655 | 30.666 | 123,119 | 224,537 |
| - 1962 | 472 | 25,383 | 53,394 | 93,268 | 6,077 | 279,308 | 518,840 | 239,047 | 169 | 671 | 32,987 | 134, 404 | 244,393 |
| 1963 | 467 | 27,274 | 57,825 | 103,678 | 6,318 | 305,863 | 571,441 | 266,399 | 148 | 587 | 35,021 | 146,837 | 272,274 |
| 1964 | 487 | 28,541 | 60,896 | 113,578 | 6,937 | 337,770 | 628,094 | 291,680 | 155 | 657 | 36,828 | 160,995 | 298, 169 |
| London, Ont........ . . . . . . . . . . . . . . 1961 | 310 | 12,406 | 25,658 | 45,939 | 3,747 | 140,728 | 297,291 | 161,437 | 141 | 490 | 18,524 | 77,186 | 170,869 |
| 1962 | 320 | 13,402 | 27,701 | 51,359 | 3,976 | 162,941 | 339,747 | 174,678 | 155 | 578 | 19,719 | 84,788 | 186,377 |
| 1963 | 317 3 | 13,542 | 28,169 | 54,268 | 4,231 | 187, 199 | 375,913 | 185,391 | 143 | 579 | 19,787 | 88,801 | 203,106 |
| 1964 | 323 | 14,187 | 29,934 | 60,433 | 4,487 | 208, 814 | 426,566 | 217,879 | 146 | 585 | 20,670 | 96,551 | 231,109 |
| Montreal, Que...................... . 1961 | 5,088 | 173,468 | 361,682 | 601,185 | 43,640 | 2,166,674 | 3,997,515 | 1,814,000 | 2,415 | 10,292 | 245,245 | 978,343 | 1,879,623 |
| 退 1962 | 5,136 | 177,394 | 378,802 | 646,316 | 46,353 | 2,358,617 | 4,339,530 | 1,960,041 | 2,331 | 10,137 | 248,034 | 1,031,061 | 2,032,825 |
| 1963 | 5,182 | 175, 660 | 373,903 | 655,435 | 47,389 | 2,510,960 | 4,559,161 | 2.005, 922 | 2,190 | 10,017 | 245,327 | 1,051,508 | 2,081,787 |
| 1964 | 5,398 | 182,946 | 390,524 | 709,157 | 49,833 | 2,673,398 | 4,866,656 | 2,163,835 | 2,185 | 10,104 | 253,919 | 1,129,201 | 2, 258,677 |
| Ottawa, Ont......... . . . . . . . . . . . . . . 1961 | 330 | 11.517 | 24,441 | 45,987 | 10,620 | 127,609 | 277,961 | 140,239 | 163 | 576 | 17,259 | 74,687 | 145,037 |
| 1962 | 337 | 11,997 | 25,579 | 49,826 | 10,946 | 134,724 | 303,478 | 158,673 | 170 | 648 | 17,571 | 79,305 | 164,393 |
| 1963 | 328 | 11,848 | 25,200 | 50,552 | 11, 113 | 138,766 | 307,231 | 158,882 | 167 | 668 | 17,522 | 82,456 | 161,865 |
| 1964 | 337 | 12,327 | 26,508 | 55,214 | 12,663 | 150,815 | 333,581 | 170,355 | 172 | 691 | 18,238 | 89,006 | 175,932 |

10.-Summary Statistics of Manufactures, by Census Metropolitan Area, 1961-\&1-concluded

| Census Metropolitan Area and Year | Eatab-lishments | Mantiacturing Activity |  |  |  |  |  |  | Total Activity |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Production and Related Workers |  |  | Cost of Fuel and Eleotricity ${ }^{2}$ | Cont of Materials and Supplies Used | Value of Shipmenta of Goods of Own Manufactare | Value Added | Working Owners and Partners |  | Total Employess ${ }^{3}$ |  | Total Value Added ${ }^{4}$ |
|  |  | Number | Man- <br> Hours <br> Paid | Wages |  |  |  |  | Number | With. drawale | Nomber | $\left\lvert\, \begin{gathered} \text { Salaries } \\ \text { and } \\ \text { Wages } \end{gathered}\right.$ |  |
| Quebee, Que............................ 1981 | No. |  | ${ }^{\circ} 000$ | \$'000 | $\$ 1000$ | \$ ${ }^{\prime} 000$ | \$'000 | \$000 |  | \$'000 |  | \$000 | \$'000 |
|  | 605 | 17,234 | 36.450 | 55.576 | 8,408: | 148.092 | 316,460 | 159,007 | 369 | 1,372 | 23, 428 | 82,462 | 162,452 |
|  | 573 | 17, 324 | 37,023 | 59.8211 | 8,705 | 185, 427 , | 337.198 | 183,724 | 334 | 1,296 | 23, 344 | 87,804 | 188, 588 |
|  | 562 | 17,664 | 37,882 | ${ }^{64.112}$ | 8.968 | 184,812 | 371.427 | 179,518 | 285 | 1,139 | 23,008 | 93,083 | 183,070 |
|  | 561 | 17,283 | 36, 908 | 64,672 | 9,075 | 181, 800 | 395,001 | 196, 362 | 275 | 1,139 | 23,116 | 94,555 | 200,558 |
| Saint John, N.B.................. 1981 | 109 | 6.185 | 10,868 | 17,361 | 3,439 | 111,394 | 174,884 | 62,85\% | 41 | 108 | 6,784 | 24,252 | 64, 119 |
|  | 109 | 5.258 | 11,399 | 19,453 | 3,640 | 108, 619 | 175.384 | 62,264 | 41 | 120 | 6,900 | 26.699 | 64,045 |
|  | 104 | 5.406 | 11.978 | 21,401 | 3,898 | 143,417. | 207,563 | 81,325 | 36 | 112 | 7,061 | 29,267 | 62,843 |
|  | 102 | 4,856 | 10,723 | 20,344 | 3,878 | 130,899 | 213,376 | 68, 485 | 33. | 108 | 6.505 | 23,689 | 70,911 |
| St. John's, Nfid.................... 1881 | 78 | 1,767 | 3,724 | 4,8069 | 619 | 13,614 | 29.713 | 15,263 | 30 | 97 | 2,435 | 7. 505 | 15, 826 |
|  | 80 78 | 1,708 1,689 | 3,800 <br> 3,645 | 4,968 | 633 663 | 13,650 | 30.342 | 16.460 | 31 | ${ }^{982}$ | 2.336 | 7,509 | 18,972 18,700 |
|  | 78 | 1,689 | 3,645 | 5.070 5,188 | 663 679 | 15,838 16.218 | 34,108 34,080 | 17,751 | 28 28 | 100 98 | 2,330 | 7,968 | 18,700 17,892 |
| Toronto, Ont....................1961 1962 | 5,011 | 156, 618 | 330,092 | 608,645 | 47,438 | 2,230,820 | 4, 188,902 | 1,917, 424 | 2,284 | 9,613 | 235.3871 | 1,027,604 | 2,075,969 |
|  | 5,118 | 168.871 | 347,057 | 662, 345 | 49,899 | $2,513,046$ | 4,638,370 | 2,113,922 | 2,225 | 9,689 | 242,268 | 1,094,098 | 2,298,291 |
|  | 5,139 | 172,227 | 365,937 | 725, 972 | 52,487 | 2,803,126 | 5,081, 450 | 2.251.868 | 2,123 | 9,623 | 251.7911 | 1,189,386 | 2.433, 803 |
|  | 5,352 | 181,388 | 386, 828 | 799,044 | 56,713 | 3,124, 272 | \$,657, 816 | 2,511,092 | 2,108 | 9,947 | 263,325 | $1.296,452$ | 2,734,704 |
| Vancouver, B.C.................. 19.961 | 1,744 | 37,173 | 73,372 | 157,683 | 15,249 | 555,748 | 976,580: | 407, 845 | ${ }^{678}$ | 2,528 | 51,348 | 230.751 | 424,280 |
|  | 1,785 | 38,287 | 76, 821 | 169,107 | 16.557 | 614,721 | 1,079, 422 | 456,963 | 659 | 2,597 | 52,812 | 246,978 | 474, 496 |
|  | 1.783 | 39,700 | 80,481 | 183, 906 | 17,389 | 665,320 | 1,175, 417 | 500,907 | 627 | 2,633 | 54, 346 | 265,718 | 526,898 |
|  | 1,888 | 41,902 | 84,789 | 200,371 | 18,534 | 744, 439 | 1,294,328 | 538,581, | 619 | 2,624 | 57,375 | 291,047 | 563, 470 |
| Victoria, B.C...................... 1981 | 213 | 4,262 | 8.103 | 18.510 | 1,770 | 37,078 | 80, 139 | 40,148 | 142 | 507 | 5,710 | 25.294 |  |
|  | 221 | 4.637 | 9,514 | 22.538 | 1,168 | 47,313 | 96,586 | 48,300 | 148 | 566 | 6,175 | 29.798 | 50,012 |
|  | 215 | 4,614 | 9, 434 | 22.639 | 1,114 | 52,412 | 104, 562 | 52.911 | 124 | 503 | 6.161 | 30,331 | 54,857 |
|  | 222 | 4,385 | 8,809 | 22,078 | 1,158 | 61,829 | 110.328 | 49.550 | 133 | 547 | 5,925 | 30,155 | 51,757 |
| Windsor, Ont.................... 1991 | 382 | 15.851 | 33,069 | 74, 472 | 6,110 | 239,720 | 448,230 | 202,313 | 176 | 596 | 22,283 | [15,033 | 215, 205 |
|  | 391 | 15,958 | 34,165 | 78,359 | 6.418 | 275, 285 | 489,901 | 222, 426 | 192 | 712 | 22,087 | 118,588 | 230, 456 |
|  | 380 | 17.694 | 38,696 | 93,871 | 6.928 | 361,628. | 657.499 | 299.597 | 167 | 699 | 24,352 | 137,853 | 309,546 |
|  | 395 | 21,039 | 48,373 | 119,387 | 7,523 | 447,918 | 789,172 | 346,728 | 168 | 708 | 28, 121 | 168,956 | 362,295 |
| Winsipez. Man.................. 19619 | 995 | 23,996 | 49,187 | 81,427 | 7.984 | 364.941 | 605. 996 | 236, 824. | 438 | 1,692 | 33,891 | 128.783 | 245,559 |
|  | 1.008 | 24,104 | 49,984 | 84,624 | 8.328 | 379.956 | 640,564 | 252, 275 | 416 | 1,554 | 33,800 | 132,581 | 262, 12 |
|  | 1,006 | 24,905 | 51, 864 | 89,481 | 8.487 | 400, 284 | 670, 434 | 266.186. | 402 | 1,598 | 34.579 | 138,410 | 277,987 |
|  | 1,028 | 25,933, | 54,313 | 95.750 | 8,776 | 440,287 | 727.130 | 280, 885 | 393 | 1,554 | 35,787. | 146, 406 | 293, 774 |

## Subsection 3.-Size of Manufacturing Establishments Based on Employment and Shipments

## Size Based on Employment

About one half, or 50.6 p.c. of all persons employed in Canada's manufacturing industries in 1964 worked in establishments employing 200 or more persons; about one fifth, or 18.5 p.c., worked in establishments employing 1,000 or more. There were 127 establishments employing 1,000 or more, all but 18 of them in Ontario and Quebec; of these 18, 12 were in Western Canada and six were in the Atlantic Provinces.

The cyclical upswing in busincss activity which began in 1961 and continued through 1964 tended to increase business volume for manufacturing generally and was especially favourable to certain industries characterized by large plants; this cyclical stimulus combined with long-term growth of the manufacturing industries to shift these employment breakdowns in an upward direction. Thus, establishments employing 1,500 or more increased their employment by almost 14 p.c. between 1961 and 1964, as against a decrease of 12 p.c. in the employment of establishments employing fewer than 200; these comparisons refer, of course, to statistical size-classes as such, not identical groups of plants in the two years.

11.-Establishments and Employment in the Manufacturing Industries, by Number Employed per Establishment, 1949, 1355, 1963 and 1964

| Size Group ${ }^{\text {² }}$ | Establisbments | Employees | Working Ownerg and Partners | Pro- portion of Total Em- ployment | Establishments | Employees | Working <br> Owners and <br> Partners | Proportion of Total Ern. ployment ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1949 |  |  |  | 1955 |  |  |  |
|  | No. | No. |  | p.c. | No. | No. |  | p.c. |
| Under 5 employed.5 to 14 | 16,647 | 34,865 |  | 3.0 | 17,002 | 36,340 |  | 2.8 |
|  | 9,133 | 75.482 |  | 6.4 | 9,864 |  |  | 6.3 |
| 15 to 49 " | 5,967 | 159,012 |  | 13.6 | 6.340 | 169. |  | 13.1 |
| 50 to 98 " | 1,905 |  |  | 11.3 | 2,082 | 144 |  | 11.1 |
| 100 to 199 " | 1. 114 | 156,084 |  | 13.3 | 1,175 | 163, |  | 12.6 |
| 200 to 499 " | 684 | 213,130 |  | 18.2 | 739 | 227. |  | 17.5 |
| 1, 5000 to 9999 " |  | 391,455 |  |  | 243 | 167. |  | 12.9 |
| ${ }_{1}^{1,000 ~ t o ~ 1, ~} 1,499$ " | 332 |  |  | 33.4 | 76 |  |  | 7.1 |
| Head offices. | - | 9,110 |  | 0.8 | 61 | ${ }_{15}$ |  | 15.4 1.2 |
| Totals. | 35,782 | 1,171,207 |  | 100.0 | 38,18\% | 1,288,461 |  | 104.4 |
|  | 1983 |  |  |  | 1964 |  |  |  |
|  | No. | No. | No. | p.e. | No. | No. | No. | p.c. |
| Under 5 employed. | 12,352 | 16, 346 | 10, 775 | 2.0 | 12,075 | 16,614 | 10,618 | 1.8 |
| 5 to $14{ }^{\text {" }}$ " | 9,134 | 71.207 | 5,150 | 5.68 | 9,133 | 72,445 | 4,259 | 5.1 |
| 15 to 49 " | 6, 829 | 184,550 | 1,055 | 13.6 | 7,012 | 191,063 | 793 | 12.7 |
| 50 to 99 | 2,445 | 169,319 | 88 | 12.4 | 2,627 | 175,552 | 61 | 11.7 |
| 100 to 199 " | 1,377 | 190.540 | 17 | 13.9 | 1,515 | 211,016 | 12 | 14.0 |
| 200 to 499 " | 869 | 261,628 | 4 | 18.1 | 966 | 293,256 | 4 | 19.4 |
| 500 to 999 | 243 | 169,392 | - | 12.3 | 275 | 191,488 | - | 12.7 |
| 1,000 to 1,499 " | 55 | 68,743 | - | 5.0 | 65 | 78.283 |  | 5.2 |
| 1,500 or over. | 58 | 165,577 | - | 12.1 | 62 | 200,347 | - | 13.3 |
| Head offices ${ }^{\text {3 }}$. | $\sim$ | 54,733 | - | 4.0 | - | 61,213 | - | 4.1 |
| Totals. | 33,357 | 1,352,535 | 16,933 | 100.6 | 33,634 | 1,451,257 | 15,747 | 140.0 |

1 Includes working owners and partners.
2 Newfoundland included from 1955. $\quad 3$ Not comparable with years prior to $19 \hat{1} 1$ when coverage of head offices was incomplete.
12.- Listablishments in the Manefacturing Industries classified by Number Employed and by Province, 1964

| Province or Territory | Number Employed ${ }^{\text {d }}$ |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\underset{5}{\text { Under }}$ | 5 14 | 15 to 49 | $\begin{aligned} & 50 \\ & \text { to } \\ & 99 \end{aligned}$ | $\begin{aligned} & 100 \\ & \text { to } \\ & 199 \end{aligned}$ | $\begin{gathered} 200 \\ \text { to } \\ 499 \end{gathered}$ | $\begin{aligned} & 500 \\ & \text { to } \\ & 999 \end{aligned}$ | $\begin{aligned} & 1,000 \\ & t o \\ & 1,499 \end{aligned}$ | $\begin{aligned} & 1,500 \\ & \text { or } \\ & \text { Over } \end{aligned}$ | Total |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| Newtoundiand......... | 157 | 50 | 47 | 21 | 18 | 4 | - | 1 | 1 | 299 |
| Prince Edward Island... | 78 | 38 | 24 | 3 | 3 | 2 | - | - | - | 148 |
| Nova Scotia............ | 409 | 266 | 199 | 56 | 21 | 22 | ${ }_{5}^{6}$ | 1 | $\underline{1}$ | ${ }_{724} 98$ |
| New Brunswick.......... | 4.298 | +190 | ${ }_{2} 144$ | 880 | $\begin{array}{r}29 \\ 473 \\ \hline\end{array}$ | 16 | $\stackrel{3}{9}$ | 21 | 18 | 11.097 |
| Ontario. | 4,026 | 3,419 | 2,828 | 1,097 | 718 | 490 | 135 | 31 | 39 | 12,781 |
| Manitobs. | 578 | 387 | 281 | 133 | 54 | 31 | 5 | 2 | - | 1,471 |
| Saskatchewan | 328 | 258 | 131 | 26 | 21 | 8 | 1 | - | - | 773 |
| Alberta. | 670 | 566 | 330 | 91 | 58 | 22 | 8 | 1 | $\cdots$ | 1,746 |
| British Columbia | 1,495 | 997 | 684 | 199 | 122 | 68 | 23 | 6 | 3 | 3,597 |
| Yukon and Northwes | 4 | 5 | 3 | 1 | - | - | - | - | - | 13 |
| Canada | 12,075 | 9,133 | 7,012 | 2,527 | 1,515 | 966 | 275 | 65 | ${ }^{*}$ | 33,630 |

[^215]
## Size Based on Shipments

Although the average value of shipments of manufacturing establishments throughout Canada in 1964 was somewhat less than $\$ 1,000,000$, those with shipments of more than $\$ 1,000,000$ accounted for 84.7 p.c. of all shipments of goods of own manufacture. There were 4,556 manufacturing establishments with shipments valued at more than $\$ 1,000,000$ and, of these, 3,515 or 77.2 p.c. Were in Ontario and Quebec, 420 or 9.2 p.c. were in the Prairie Provinces, 415 or 9.1 p.c. were in British Columbia, and 206 or 4.5 p.e. were in the Atlantic Provinces.

## 13.-Dstablishments and Shipments In the Manufacturing Industries, by Shipments per Establishment, 1963 and 1964

| Value Group | Estab-lishments | Value of Shipments of Goods of Own Manufacture | Average per Establish. ment |  | Estab. lishmenta | Value of Shipments of Goods of Own Manufacture | A verage per Estab-lishment | Proportion of Total Shipments |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1963 |  |  |  | 1964 |  |  |  |
|  |  |  | $8^{\prime} 000$ | p.c. | No. | \$'000 | 8000 | D.c. |
| Under $\$ 25,000$. | 8,052 | 96,975 | 12 | 0.3 | 7,783 | 94,475 | 12 | 0.3 |
| 825,000 but under \$50.000. | 4,444 | 160,991 | 36 | 0.8 | 4,568 | 164,585 | 36 | 0.5 |
| 50,000 " ${ }^{\text {c }}$ " $100,000$. | 4, 569 | 327,615 | 72 | 1.2 | 4.592 | 328,343 | 72 | 1.1 |
|  | 4,319 <br> 4 | $\begin{array}{r}617,878 \\ \hline 554 \\ \hline\end{array}$ | 143 | 2.2 | 4,370 | 626,571 1 | 143 | 2.0 |
| $\begin{array}{llll}200,000 \\ 500,000 & \text { " } & \text { " } & 500,000\end{array}$ | 4,839 | 1, $1+850,575$ | 701 | ${ }_{6.5} 6$ | 8,692 | 1, $1.893,953$ | 704 | 6.1 |
| 1,000,000 " ${ }^{\text {c }}$ (5,000,000 | 3,224 | 8,854,637 | 2.126 | 24.5 | 3, 464 | 7,393,252 | 2,131 | 24.0 |
| 5,000,000 or over......... | 983 | 16,551,415 | 16.838 | 59.1 | 1,092 | 18,732,715 | 17.185 | 60.7 |
| Totals and A rerages. | 38,119 | 28,014,888 | 846 | 100.9 | 33, 630 | 30,856,099 | 918 | 100.0 |

14.-Establishments in the Manufacturing Industries classified by Value of Shipments of Goods of Own Manufacture and by Province, 1964


## Section 5.-Federal Assistance to Manufacturing

The federal Department of Industry was established in July 1963, to promote the growth, efficiency and improvement of manufacturing industries in Canada. The Department assists Canadian industries to adapt to technological changes and variations in domestic and export market; it aids potentially sound industries to overcome problems of growth and development and promotes industrial research, development and design activity.

Automotive Program.-The Canada-United States Agreement on Automotive Products, signed by Prime Minister Pearson and President Johnson on Jan. 16, 1965, provides for the removal of tariffs and other impediments to trade between the two countries in motor vehicles and original equipment parts. The basic objective of the plan is to provide access to expanded markets for Canadian motor vehicle and component producers. By increased production and specialization, they will be in a position to expand trade and employment and to improve the productivity and efficiency of the industry In order to enable Canadian vehicle and parts producers to achieve these objectives, a number of important features were incorporated into the program. The most important of these was the undertaking of Canadian motor vehicle manufacturers to expand very considerably Canadian production by the end of the 1968 calendar year.

As a result of the new program, Canada is producing an increasingly larger share of the total North American output of vehicles and components. Canadian exports of vehicles and parts and employment in this industry have increased substantially since the implementation of the program and new investment in additional plants and expansions to existing facilities have been extensive.

Adjustment Assistance (for Firms in the Automotive Parts Industries).The Automotive Program offers increased opportunities to Canadian automotive parts manufacturers for expanded production, rationalization of output and reduced costs. In order to take advantage of these opportunities, Canadian parts makers must engage in substantial re-equipment and plant expansion programs. The Adjustment Assistance Program has been established to make term loans available to automotive parts manufacturers for the financing of the acquisition, construction, installation and modernization of facilities or machinery and for use as working capital.

A program of tariff remissions on imported machinery and equipment was also introduced in order to further assist the automotive parts producers to expand and modernize productive facilities. The tariff remissions cover machinery and equipment used in the production of original equipment automotive parts, accessories and tooling when such machinery and equipment are not available from Canadian manufacturers in time to meet production schedules.

Industrial Design.-Industrial design is becoming increasingly important to the successful development and marketing of manufactured products and to assist Canadian manufacturers in adopting sound design practices, the Department of Industry has initiated a comprehensive design program. The four main areas of design activity under the program are: design promotion in industry; research and product development; design education; and design information.

The National Design Council advises the Minister of Industry on programs to promote and assist the improvement of design in Canadian manufactured products. The Council's administrative arm, the National Design Branch, develops and implements approved design programs to stimulate design education and the application of good design techniques in industry.

Projects were sponsored in 1966 in co-operation with industry associations to encourage the creative use of wood, structural steel and concrete, as well as to recognize good design in the products of Canadian appliance manufacturers. A major program, Canada-Design ' 67 initiated in March 1965, recognized well-designed Canadian products required to construct, furnish and equip Centennial and Expo 67 projects. Promotion of these products was conducted through displays, press publicity, specification tearsheets and through two Design ' 67 Catalogues which have been distributed to principal buyers in Canada and abroad.

Continuing activities by the Council include the operation of the Design Centre in Toronto, which is a focal point for product and design promotion; the Design Index, a
reference system containing information about well-designed products and the Canadian Register of Designers which provides data to industry on designers and design services. A Design Centre will be established in 1967 in Montreal.

Area Development Program.-The area development program fosters economic development in designated areas characterized by high chronic unemployment, slow employment growth and serious problems of underemployment as measured by low nonfarm family income. Several financial incentives designed to assist new and expanding manufacturing and processing industries in the designated areas are available including a three-year income tax abatement on capital grants for new machinery and buildings, as well as special depreciation rates on new machinery, equipment and buildings. The three-year tax abatement measure expires Mar. 31, 1967.

The program embraces large regions of the country, in all ten provinces, with 65 Canada Manpower Centre areas and 16 counties and census divisions being designated. The program covers areas comprising approximately 16 p.c. of the labour force. Since the inception of the program in December 1963, more than 600 firms have indicated their intention to establish new or expanded facilities in designated areas and to invest more than $\$ 1,250,000,000$. More than 41,000 new jobs were to be provided directly by these factories as well as a similar number of additionsl jobs associated with supply and service industries.

Program for the Advancement of Industrial Technology.-In 1965 the Department of Industry initiated a Program for the Advancement of Industrial Technology (PAIT) to stimulate industrial growth by the application of science and technology to the development of new or improved products and processes. The basic aim of the program is to help industry upgrade its technology and expand its innovation activity by underwriting specific development projects that involve a significant advance in technology and which, if successful, offer good prospects for commercial exploitation. PAIT is essentially a form of "development insurance" with the Government sharing the financial risk of the development with the sponsoring company.

PAIT assistance is available to individual Canadian companies or groups of Canadian companies for developmental projects to be carried out and exploited in Canada. Companies are expected to have the capabilities and facilities to undertake the development work and also to provide for the manufacture and sale of the resulting products in both domestic and export markets. This program is designed to increase the technical competitiveness of Canadian industry and is also intended to help create an industrial environment attractive to Canada's best-qualified scientific, technical and managerial personael.

Sixty-six Government-assisted development projects, representing a total effort of approximately $\$ 25,500,000$, have been undertaken by Canadian firms since the inception of the PAI'T program.

Defence Product-Development Assistance.-In the year since November 1965, new commitments totalling approximately $\$ 17,000,000$ were made under the Defence Development Assistance Program to foster the growth of a development capability in Canadian industry in support of the Production-Sharing Program. The projects supported under the program to meet present or anticipated requirements of military services of the United States and other allied governments included: Helicopter Logistic Devices at Okanagan Helicopters (Vancouver): Air Transportable Maintenance Shop at ATCO (Calgary); Black Brant Family of Rockets at Bristol Aerospace (Winnipeg); Tilt Wing Aircraft at Canadair (Montreal); High Frequency Sounding Equipment at EMI Cossor (Halifax); Xenon Light Sources at Atlantic Films (St. John's, Newfoundland); the Twin Otter Aircraft Turbinization Project at de Havilland (Toronto); the OT-4 Stationary Gas Turbine Engine at Orenda (Toronto) and Parachute Developments at Irvin Airchute (Fort Erie). For the year ended Mar. 31, 1967, the Government approved a cash authorization of $\$ 25,000,000$ for this program.

Shipbuilding Construction Assistance.-During 1966, the Federal Government continued its program of encouraging a self-sustaining and efficient shipbuilding industry. The program included examination of financial measures in support of shipbuilding and the application of general assistance plans administered by the Department of Industry.

The industry responded effectively during the year to the policy of national competition for government shipbuilding requirements. Similarly, the industry made active use of the subsidy program for commercial vessels which provides a subsidy rate of 25 p.c. for vessels, other than fishing trawlers, for the period 1966-69, after which time it will be reduced by 2 p.c. each year until a rate of 17 p.c. is reached in 1972 . The current subsidy rate of 50 p.c. for fishing trawlers is being continued.

Industrial Missions.-Industrial missions concerning wood components, structural ceramics and prefabricated and pre-cast concrete were recently organized to visit industrial establishments in the United States and Europe. The purpose of these missions is to enable Canadian business men to examine and assess the latest technological developments taking place outside Canada in their particular industries. The information gained is prepared in report form and circulated to Canadian industry.

## CHAPTER XVII.-CAPITAL EXPENDITURES, CONSTRUCTION AND HOUSING*



The interpretation of the symbols used in the tables throughout the Fear Book will be found on:p. viit of this volume.

This Chapter provides data on the capital expenditures made by all sectors of the Canadian economy on construction and on machinery and equipment, together with summaries of other available statistics for the construction industry. Section 1 shows the amounts spent by each of the various industrial or economic sectors. Section 2 brings together a number of summaries of related series on construction activity-value of work performed by type of structure, value of materials used, salaries and wages paid and numbers employed, contracts awarded and building permits issued. Government aid to house-building, construction of dwelling units and housing statistics of the 1961 Census are covered in Section 3.

## Section 1.-Capital Expenditures on Construction and on Machinery and Equipment

Capital expenditures $\dagger$ in all sectors of the economy amounted to $\$ 12,798,000,000$ in 1965, an increase of 16.9 p.c. over the 1964 total of $\$ 10,944,000,000$. The over-all increase resulted from a 16.7 -p.c. rise in the purchase of machinery and equipment and a 17.1-p.c. increase in construction expenditures. After 1946, capital outlays in Canada increased each year to a peak in 1957 A four-year decline followed but a significant increase shown in 1962 was strengthened in the next three years. Capital spending in current dollars exceeded the 1957 peak in these years but, in constant dollars, the 1957 level was not exceeded until 1964; in that year the capital program was recorded at 8.7 p.c. above 1957 and in 1965 it was 21.0 p.c. higher. These expenditures on the expansion, modernization or renewal of the nation's production facilities are a significant indicator of the economic activity in the country; in 1965 they represented over 24 p.c. of the gross national product.

[^216]As shown in Table 1, construction accounta for about two thirds of the total capital expenditures each year and machinery and equipment for about one third. Recently, there has been a slightly upward trend in the proportion of the total represented by the purchase of machinery and equipment, which rose from 32.5 p.c. in 1961 to 35.9 p.e. in 1965. The proportion for housing construction moved upward from 17.9 p.c. in 1961 to 18.5 p.c. in 1964 but dropped to 16.7 p.c. in 1965 . Non-residential construction outlays dropped from 49.6 p.c. of the total in 1961 to 47.4 p.c. in 1965.

## 1.-Capital Expenditures on Construction and on Machinery and Equipment, in Current and Constant (1957) Dollars, 1955-\$5

Norz.-Actual expenditures 1955-64; preliminary actual 1965.

| Year | Capital Expenditures |  |  |  |  |  | Total Expenditare as Percentage of Gross National Product |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Construction |  | Macbinery and <br> Equipment |  | Totals |  |  |  |
|  | Carrent Dollars | Constant 1957 <br> Doilare | Current Dollars | $\begin{gathered} \text { Constant } \\ 1957 \\ \text { Dollary } \end{gathered}$ | Current Dollars | Conatant 1957 <br> Dollara | Current <br> Dollars | Constant 1957 Dollars |
|  | \$ 000,000 | \$'000,000 | \$ $\mathbf{0 0 0 , 0 0 0}$ | \$ ${ }^{\prime} 000,000$ | \$000,000 | \$ ${ }^{\prime} 000,000$ | p.c. | p.c. |
| 1955..... | 4,169 | 4,512 | 2,075 | 2,305 | 6,244 | 6,817 | 23.0 | 23.5 |
| 1956. | 5,273 | 5,445 | 2,761 | 2,888 | 8,034 | 8,333 | 26.3 | 20.4 |
| 1957.... | 5,784 | 5,784 | 2,933 | 2.933 | 8,717 | 8,717 | 27.3 | 27.3 |
| 1958... | 5,830 | 5,865 | 2,534 | 2.467 | 8,364 | 8,332 | 25.4 | 25.9 |
| 1959.. | 5,709 | 5.557 | 2,708 | 2.590 | 8,417 | 8,147 | 24.1 | 24.5 |
| 1960. | 5,453 | 5,224 | 2,809 | 2,636 | 8,262 | 7,860 | 22.8 | 23.0 |
| 1961... | 5,518 | 5,331 | 2,654 | 2,455 | 8,172 | 7,780 | 21.8 | 22.3 |
| 1962... | 5,787 | 5,388 | 2,928 | 2,643 | 8,715 | 8,031 | 21.5 | 21.7 |
| 1963... | 6.157 | 5,623 | 8,236 | 2,859 | 9,393 | 8,482 | 21.6 | 21.6 |
| 1964. | 7.004 | 6,139 | 3,940 | 3,334 | 10,944 | 9,473 | 23.1 | 22.7 |
| 1965. | 8,201 | 6,756 | 4,597 | 3,793 | 12,798 | 10,549 | 24.6 | 23.6 |

All economic sectors with the exception of trade reported increased capital outlays in 1985 over 1964. The primary industries increased by $\$ 161,000,000$ or 11 p.c., of which $\$ 92,000,000$ was in agriculture and fishing. Capital expenditures in the mining industry expanded in 1964 by $\$ 112,000,000$ but by only $\$ 55,000,000$ in 1965 ; in the latter year, higher output for gas and oil development was offset by lower expenditures for iron ore mines. Expenditures on new manufacturing facilities were up by $\$ 407,000,000$, or 22 p.c., mainly as a result of increased outlays in the chemical industry (for production of fertilizers, plastics, caustic soda, chlorine and synthetic fibres), in the pulp and paper industry, and in the transportation equipment industry (mostly for automobile manufacture). Capital expenditures for utilities (including transportation, communication and storage, and public utilities such as gas, water and electricity) were up by $\$ 350,000,000$ or 17 p.c.; much of this increase resulted from significantly larger programs by electric power producers, railways and urban transit systems, offset partially by lower expenditures for oil and gas pipelines. The 1965 housing activity was up by $\$ 105,000,000$, a modest increase of 5 p.c. Trade, finance and commercial services increased expenditures by $\$ 176,000,000$ or 17 p.c.

Institutional services (including hospitals, schools, universities, churches and welfare institutions) increased by $\$ 238,000,000$ or 31 p.c., the sharpest rate of increase. Of the latter, $\$ 140,000,000$ was for schools, $\$ 87,000,000$ for university buildings and $\$ 18,000,000$ for hospitals; other institutions, including churches, declined by some $\$ 9,000,000$. Capital outlays by governments at all levels rose by $\$ 370,000,000$, an increase of 25 p.c. (Government departments as defined for capital expenditures purposes include the part of government activity, excluding institutions, generally dependent on tax revenues for financial support as opposed to activities directly producing revenues on a service-rendered basis.) Spendings by the federal, provincial and municipal governments increased by $\$ 105,600,000$, $\$ 187,200,000$ and $\$ 77,200,000$, respectively. The high increase at the provincial level was due mainly to expanded highway construction programs.

All provinces except Newfoundland contributed to the 1965 increase in capital spending. In Newfoundland, bigher expenditures on electric power, hospital and provincial government construction were offset by a sizable decline in iron ore investments. An advance of 33.3 p.c. recorded by Prince Edward Island was almost entirely due to increased federal and provincial expenditures. Nearly one third of the 31.9 p.c. increase in New Brunswick came from an expanded program for electric power construction and another third from greater outlays by all levels of government. Increases exceeding the national average of 16.9 p.c. were also recorded by British Columbia ( 25.4 p.c.), Nova Scotia (22.9 p.c.), Saskatchewan (21.4 p.c.) and Alberta (17.7 p.c.). Approximately one third of the increase in British Columbia was attributed to electric power construction; somewhat less than one quarter to the manufacturing sector, pulp and paper projects being the largest contributors; and about one sixth to institutions and governments at all levels. In Nova Scotia, nearly one half of the increase resulted from expenditures of government, and to expanded programs of school, university and hospital construction; manufacturing as a group contributed more than one third of the increase, the most notable advances being in the paper products, non-metallic mineral and chemical industries. In Saskatchewan, over one third of the gain was attributable to expanded programs by governments and to increased spendings for university and school construction and about two fifths to expanded outlays in the primary industries, with investments in agriculture and fisheries, petroleum and gas wells, and miscellaneous mining making the greatest contributions. In Alberta, more than two fifths of the increase was accounted for by expenditures for petroleum and gas wells, one fifth by institutions and governments, one tenth by agriculture and fisheries and a little less than one tenth by chemical products. The rates of increase in Ontario ( 16.1 p.c.) and in Quebec ( 14.3 p.c.) were smaller than the national average but in dollar volume their increases of $\$ 602,000,000$ and $\$ 402,000,000$, respectively, were the largest, followed by British Columbia with $\$ 329,000,000$. In Ontario, two fifths of the impetus came from the manufacturing sector with investments of the chemical, transportation equipment, paper products and textile industries making the greatest contributions; a little less than one third came from the outlays of governments and of institutions, with school and university construction showing the largest gains. In Quebec, spendings by governments and spendings for school, university and hospital construction accounted for more than two fifths of the increase; expanded programs by firms in the trade, financial and commercial sector contributed just under one quarter; utilities accounted for about one fifth and manufacturing for under one tenth. There was also some decline over the year in investments for iron ore development. In Manitoba, most of the 5.9-p.c. increase came from government spendings, although there were some increases in outlays for agriculture and fisheries. It might be noted that sharp year-toyear fluctuations in capital outlays in any one province are often associated with changing phases of a few large projects.
2.~-Summary of Capital and Repair Expenditures, by Economic Sector, 1964 and 1965

Notr.-Actual expenditurea 1964; preliminary actual 1965.
(Millions of dollars)

| Type of Enterprise and Year | Capital |  |  | Repair |  |  | Capital and Repair |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Conatruc tion | Machinery and Equipment | Total | Con-struction |  | Total | Con-atruction | Ma. chinery and Equipment | Total |
| Agriculture and fiehing....... 1964 | 195 | 641 | 836 | 77 | 174 | 251 | 272 | 815 | 1,087 |
| 1965 | 203 | 725 | 928 | 81 | 180 | 261 | 284 | 005 | 1,189 |
| Forestry..................... . 1964 | 39 | 49 | 88 | 18 | 39 | 57 | 57 | 88 | 145 |
| 1965 | 45 | 57 | 102 | 18 | 38 | 56 | 63 | 95 | 158 |
| Mining, quarrying and oil wella. | 454 | 178 | 632 | 45 | 133 | 178 | 499 | 311 | 810 |
| 1965 | 541 | 146 | 687 | 51 | 143 | 194 | 592 | 289 | 881 |
| Manufacturing . . . . . . . . . . . 1964 | 443 | 1,388 | 1,831 | 147 | 749 | 896 | 590 | 2,137 | 2,727 |
| 1965 | 560 | 1,669 | 2,238 | 145 | 746 | 891 | 714 | 2,415 | 3,129 |
| Utilities...................... 1964 | 1,332 | 727 | 2,059 | 290 | 532 | 822 | 1,622 | 1,258 | 2,881 |
| 1965 | 1,472 | 946 | 2,418 | 299 | 555 | 854 | 1,771 | 1,501 | 3,272 |
| Construction................ . 1964 | 14 | 183 | 197 | 6 | 168 | 174 | 20 | 351 | 371 |
| 1965 | 17 | 218 | 235 | 7 | 199 | 206 | 24 | 417 | 441 |
| Housing. . . . . . . . . . . . . . . . 1964 | 2,028 | - | 2,028 | 577 | - | 577 | 2,605 | - | 2,605 |
| 1965 | 2,133 | $\cdots$ | 2,133 | 619 | - | 619 | 2,752 | - | 2,752 |
| Trade (wholesale and retail) . 1964 | 146 | 222 | 368 | 41 | 50 | 91 | 187 | 272 | 459 |
| 1965 | 151 | 217 | 368 | 42 | 55 | 97 | 193 | 272 | 465 |
| Finance, insurance and real estate. | 290 | 52 | 342 | 20 | 5 | 25 | 310 | 57 | 367 |
| 1965 | 356 | 57 | 413 | 25 | 8 | 33 | 381 | 65 | 445 |
| Commercial services......... 1964 | 112 | 220 | 332 | 16 | 63 | 79 | 128 | 283 | $41!$ |
| 1965 | 192 | 245 | 437 | 18 | 65 | 88 | 210 | 310 | 520 |
| Institutional services........ 1964 | 648 | 123 | 771 | 61 | 18 | 79 | 709 | 141 | 850 |
| 1865 | 873 | 136 | 1.000 | 63 | 18 | 81 | 936 | 154 | 1,000 |
| Government departments. . 1964 | 1,303 | 157 | 1,460 | 331 | 71 | 402 | 1,634 | 228 | 1,862 |
| 1965 | 1,649 | 181 | 1,830 | 335 | 63 | 398 | 1,984 | 244 | 2,228 |
| Totals............. . 1964 | 7,004 | 3,940 | 10,934 | 1.639 | 2,002 | 3,631 | 8,633 | \$,342 | 14,576 |
| 1865 | 8,201 | 4,597 | 12,798 | 1,703 | 2,070 | 3,773 | 5,904 | 6,667 | 16,571 |

Details of some of the above economic sectors are given in Table 3. The value of construction work performed, together with statistics of contracts awarded and building permits issued in recent years, is covered in Section 2 of this Chapter. Housing is treated separately in Section 3.

## 3.-Capital and Repair Expenditures for Certain Economic Sectors, 1964 and 1965

Nore.-Actual expenditures 1964; preliminary actual 1965.
(Millions of dollare)

| Type of Enterprise and Year | Capital |  |  | Repair |  |  | Capital and Repair |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Con-struetion |  | Total | Con-struetion | Ms. chinery and Equipment | Total | ( Con- | Machinery and Equipment | Total |
| Foods and beverages........ ${ }_{1965}^{1964}$ | Mandfacticing |  |  |  |  |  |  |  |  |
|  | 53.6 | 122.8 | 176.4 | $\begin{aligned} & 17.8 \\ & 17.0 \end{aligned}$ | $\begin{aligned} & 77.2 \\ & 67.2 \end{aligned}$ | 95.084.2 | $\begin{aligned} & 71.4 \\ & 73.6 \end{aligned}$ | $\begin{aligned} & 200.0 \\ & 196.5 \end{aligned}$ | 271.4 |
|  | 56.6 | 129.3 | 185.8 |  |  |  |  |  |  |
| Tobsaco products............ 1964 | 2.4 | 8.0 | 8.4 10.6 | 1.2 | 3.1 5.2 | 4.3 6.1 | 3.6 3.1 | 9.1 13.6 | 12.7 |
| Rubber...... . . . . . . . . . . . . . 1964 | 5.76.0 | 18.119.3 | 23.825.3 | 1.3 | $\begin{aligned} & 12.2 \\ & 12.6 \end{aligned}$ | 13.513.9 | 7.0 | 30.331.9 | 37.339.2 |
|  |  |  |  |  |  |  |  |  |  |
| Leather...................... ${ }_{1965}^{1964}$ | 1.4 | 3.83.1 | 5.24.6 | $\begin{aligned} & 0.6 \\ & 0.5 \end{aligned}$ | $\begin{aligned} & 3.1 \end{aligned}$ | 3.78.2 | 2.0 | 8.95.8 | 8.9 |
|  |  |  |  |  |  |  |  |  |  |
| Textile...................... ${ }_{1965}^{1964}$ | $\begin{array}{r} 23.7 \\ 26.0 \end{array}$ | 67.982.2 | 91.6108.2 | 5.85.8 | $\begin{aligned} & 26.0 \\ & 26.0 \end{aligned}$ | 31.331.8 | 29.031.8 | 03.9108.2 | 122.9140.0 |
|  |  |  |  |  |  |  |  |  |  |
| Clothing and knitting mills. . ${ }_{1985}^{1964}$ | $\begin{aligned} & 3.0 \\ & 4.3 \end{aligned}$ | 14.913.6 | 17.917.9 | 1.31.3 | $\begin{aligned} & 5.7 \\ & 5.3 \end{aligned}$ | 7.06.6 | 4.35.6 | 20.618.9 | 24.924.5 |
|  |  |  |  |  |  |  |  |  |  |
| Wood...................... 19.198 | $\begin{aligned} & 15.5 \\ & 18.3 \end{aligned}$ | 45.549.5 | 61.067.8 | 6.96.5 | 42.438.8 | 49.345.3 | 24.424.8 | 87.988.3 | 110.3113.1 |
|  |  |  |  |  |  |  |  |  |  |
| Furviture and fixtures........ ${ }_{1965}^{1964}$ | 4.46.5 | 8.06.5 | 12.413.0 | 1.4 | 3.32.7 | 4.74.3 | 5.88.1 | 11.39.2 | 17.1 |
|  |  |  |  |  |  |  |  |  |  |
| Paper and silied industries... ${ }_{1965}^{1964}$ | $\begin{gathered} 69.4 \\ 120.4 \end{gathered}$ | 249.4298.4 | 318.8418.8 | 11.013.3 | $\begin{aligned} & 124.3 \\ & 122.4 \end{aligned}$ | 135.2135.7 | 80.4133.7 | 373.7420.8 | 454.1554.5 |
|  |  |  |  |  |  |  |  |  |  |
| Printing, publishing and allied industries............. . 196 |  |  |  |  |  |  |  |  |  |
|  | $\begin{aligned} & 17.1 \\ & 16.5 \end{aligned}$ | 38.533.4 | 55.649.9 | 3.83.3 | 8.5 | 12.312.2 | $\begin{aligned} & 20.9 \\ & 19.8 \end{aligned}$ | 47.042.3 | 67.962.1 |
|  |  |  |  |  |  |  |  |  |  |
| Primary metals................ 1964 | $\begin{aligned} & 58.3 \\ & 52.6 \end{aligned}$ | $\begin{aligned} & 214.5 \\ & 199.2 \end{aligned}$ | $\begin{aligned} & 272.8 \\ & 251.8 \end{aligned}$ | 18.0 | $\begin{aligned} & 194.4 \\ & 210.6 \end{aligned}$ | 212.4229.7 | $\begin{aligned} & 78.3 \\ & 71.7 \end{aligned}$ | 408.9409.8 | 485.2481.5 |
|  |  |  |  |  |  |  |  |  |  |
| Metsl fabricating . . . . . . . . . 1984 | $\begin{array}{r} 17.9 \\ 25.1 \end{array}$ | $\begin{aligned} & 54.7 \\ & 63.1 \end{aligned}$ | 72.688.2 | 6.36.2 | 32.981.4 | 39.237.6 | $\begin{aligned} & 24.2 \\ & 31.3 \end{aligned}$ | 87.694.5 | 111.8125.8 |
|  |  |  |  |  |  |  |  |  |  |
| Machinery ................... ${ }_{\text {1966 }}^{1964}$ | $\begin{aligned} & 19.2 \\ & 11.4 \end{aligned}$ | 35.431.1 | $\begin{aligned} & 54.6 \\ & 42.5 \end{aligned}$ | $\begin{aligned} & 3.9 \\ & 3.3 \end{aligned}$ | 12.911.2 | 16.814.5 | $\begin{aligned} & 23.1 \\ & 14.7 \end{aligned}$ | 48.342.3 | 71.457.0 |
|  |  |  |  |  |  |  |  |  |  |
| Transportation equipment. . . ${ }_{1965}^{\text {2964 }}$ | $\begin{aligned} & 44.4 \\ & 64.3 \end{aligned}$ | $\begin{array}{r} 90.6 \\ 143.7 \end{array}$ | $\begin{aligned} & 135.0 \\ & 208.0 \end{aligned}$ | $\begin{array}{r} 10.6 \\ 9.2 \end{array}$ | 46.450.1 | $\begin{aligned} & 57.0 \\ & 59.3 \end{aligned}$ | $\begin{aligned} & 55.0 \\ & 73.5 \end{aligned}$ | 137.0193.8 | 192.0267.3 |
|  |  |  |  |  |  |  |  |  |  |
| Electrical producta........... ${ }_{\text {l }}^{1964}$ | $\begin{aligned} & 12.0 \\ & 15.4 \end{aligned}$ | $\begin{aligned} & 37.0 \\ & 45.6 \end{aligned}$ | $\begin{aligned} & 49.0 \\ & 81.0 \end{aligned}$ | $\begin{aligned} & 4.9 \\ & 4.6 \end{aligned}$ | $\begin{aligned} & 23.1 \\ & 22.8 \end{aligned}$ | $\begin{aligned} & 28.0 \\ & 27.4 \end{aligned}$ | $\begin{aligned} & 16.9 \\ & 20.0 \end{aligned}$ | 60.168.4 | 77.088.4 |
|  |  |  |  |  |  |  |  |  |  |
| Non-metallic mineral products. $\qquad$ | $\begin{aligned} & 20.2 \\ & 24.2 \end{aligned}$ | 61.867.9 | $\begin{aligned} & 82.0 \\ & 92.1 \end{aligned}$ | 5.3 5 |  |  |  |  |  |
|  |  |  |  |  | 58.350.7 | 63.656.3 | 25.5 | 120.1 | 145.6 |
|  |  |  |  |  |  |  | 29.8 | 118.6 | 148.4 |
| Petroleum and coal products. ${ }_{1984}^{1965}$ | 20.229.2 | 4.29.3 | $\begin{aligned} & 24.4 \\ & 38.5 \end{aligned}$ | $\begin{aligned} & 32.3 \\ & 29.3 \end{aligned}$ | 5.86.7 | $\begin{aligned} & 38.2 \\ & 36.0 \end{aligned}$ | $\begin{aligned} & 52.5 \\ & 58.5 \end{aligned}$ | $\begin{aligned} & 10.1 \\ & 18.0 \end{aligned}$ | 62.674.5 |
|  |  |  |  |  |  |  |  |  |  |
| Chemicals and chemical products...................... 1964 | $\begin{aligned} & 42.9 \\ & 76.2 \end{aligned}$ |  |  |  |  |  |  |  |  |
|  |  | 100.4 | 143.3 | 12.6 | 60.7 | 73.3 | 55.5 | 161.1 | 216.6 |
|  |  | 192.9 | 269.1 | 13.9 | 61.5 | 75.4 | 90.1 | 254.4 | 344.5 |
| Miscellaneons............... . 1964 | 11.4 | 20.1 | 31.5 | 2.4 | 8.7 | 11.1 | 13.8 | 28.8 | 42.6 |
| 1985 | 12.4 | 25.6 | 38.0 | 2.5 | 9.5 | 12.0 | 14.9 | 35.1 | 50.0 |
| Capital items charged to operating expenses. 1964 | - |  |  | - |  |  |  |  |  |
| (1965 | 二 | 246.8 | 246.8 | - | - |  | 二 | 194.3 246.8 | 194.3 246.8 |
| Trotals, Manufacturing, . . 1904 | 44.7 | 1,387.9 | 1,830.8 | 146.9 | 749.1 | 896.0 |  | 2,137.0 | 2,726.6 |
| 1965 | 569.1 | 1,468.9 | \%,283.0 | 145.2 | 746.3 | 891.5 | 714.3 | 2,415.2 | 3,129,5 |

2.-Capital and Repair Expenditures for Certain Economic Seetors, 1964 and 1965-continued

3.-Capital and Repair Expenditures for Certain Economic Sectors, 1964 and 1965-concluded

| Type of Enterprise and Year | Capital |  |  | Repair |  |  | Capital and Repair |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Con-struction | Machinery and Equipment | Total | Con-struction | Machinery and Equipment | Total | Con-struction | Machinery and Equipment | Total |
|  | Trade |  |  |  |  |  |  |  |  |
| Wholesale.................. 1964 | 36.3 | 44.3 | 80.6 | 7.4 | 11.6 | 19.0 | 43.7 | 55.9 | 99.6 |
| 1965 | 26.4 | 39.9 | 66.3 | 7.7 | 15.9 | 23.6 | 34.1 | 55.8 | 89.9 |
| Chain stores................ 1964 | 25.3 28.1 | 43.0 44.4 | 68.3 72.5 | 5.8 6.3 | 7.8 8.3 | 13.6 14.6 | 31.1 34.4 | 50.8 52.7 | 81.9 87.1 |
| Independent stores.......... ${ }_{1965}^{1964}$ | 38.5 42.6 | 66.6 67.6 | 105.1 110.2 | 11.4 10.7 | 13.5 13.0 | 24.9 23.7 | 49.9 53.3 | 80.1 80.6 | 130.0 133.9 |
| Department stores.......... 1964 | 17.5 | 17.8 | 35.3 | 5.0 | 3.4 | 8.4 | 22.5 | 21.2 | 43.7 |
| Automotive trade. . . . . . . . . 1964 | 28.6 | 30.5 | 59.1 | 11.4 | 14.0 | 25.4 | 40.0 | 44.5 |  |
| Automotive trade........... ${ }_{1965}$ | 37.1 | 30.1 | 67.2 | 11.6 | 14.4 | 26.0 | 48.7 | 44.5 | 93.2 |
| Capital items charged to operating expenses........ 1964 1965 | 二 | 20.2 20.1 | 20.2 20.1 | - | - | 二 | - | 20.2 20.1 | 20.2 20.1 |
| Totals, Trade.............. 1964 | 146.2 150.7 | 222.4 217.1 | 368.6 367.8 | 41.0 42.0 | 50.3 54.7 | 91.3 96.7 | 187.2 192.7 | 272.7 271.8 | $\begin{aligned} & 459.9 \\ & 464.5 \end{aligned}$ |
|  | Institutions |  |  |  |  |  |  |  |  |
| Churches.................... . 1964 | 40.4 | 4.0 | 44.4 | 8.4 | 0.9 | 9.3 | 48.8 | 4.9 | 53.7 |
| 1965 | 37.3 | 3.2 | 40.5 | 6.1 | 0.7 | 6.8 | 43.4 | 3.9 | 47.3 |
| Universities................. 1964 | 150.2 | 27.3 | 177.5 | 5.8 | 0.7 | 6.5 | 156.0 | 28.0 | 184.0 |
| 1965 | 233.9 | 30.1 | 264.0 | 6.6 | 0.9 | 7.5 | 240.5 | 31.0 | 271.5 |
| Schools...................... 1964 | 289.3 | 49.4 | 338.7 | 25.0 | 8.8 | 33.8 | 314.3 | 58.2 | 372.5 |
| 1965 | 416.7 | 63.6 | 480.3 | 29.0 | 6.8 | 35.8 | 445.7 | 70.4 | 516.1 |
| Hospitals.................... 1964 | 145.0 | 38.3 | 183.3 | 19.6 | 7.3 | 26.9 | 164.6 | 45.6 | 210.2 |
| 1965 | 164.8 | 37.1 | 201.9 | 20.0 | 9.1 | 29.1 | 184.8 | 46.2 | 231.0 |
| Other institutional services.. 1964 | 23.4 | 4.3 | 27.7 | 2.0 | 0.4 | 2.4 | 25.4 | 4.7 | 30.1 |
| 1965 | 20.2 | 2.3 | 22.5 | 1.4 | 0.3 | 1.7 | 21.6 | 2.6 | 24.2 |
| Totals, Institutions....... 1964 | $648.3$ | 123.3 136.3 | 771.6 $1,009.2$ | 60.8 63.1 | 18.1 17.8 | 78.9 80.9 | 709.1 935.0 | 141.4 154.1 | 850.5 |
|  | Finance |  |  |  |  |  |  |  |  |
| Banks........................ 1964 | 30.3 | 14.1 | 44.4 | 4.5 | 2.1 | 6.6 | 34.8 | 16.2 | 51.0 |
| Insurance, trust and loancompanies..................... 1964 | 29.4 | 17.6 | 47.0 | 6.4 | 3.2 | 9.6 | 35.8 | 20.8 | 56.6 |
|  | 16.8 | 9.7 | 26.5 | 3.4 | 0.8 | 4.2 |  |  |  |
| - ${ }^{\text {a }} 1965$ | 15.3 | 8.7 | 24.0 | 2.9 | 1.2 | 4.1 | 18.2 | 10.5 9.9 | 38.1 |
| Other financial. . . . . . . . . . 1964 | 242.4 | 28.0 | 270.4 | 12.4 | 2.4 | 14.8 | 254.8 | 30.4 | 285.2 |
|  | 310.8 | 31.2 | 342.0 | 15.7 | 3.1 | 18.8 | 326.5 | 34.3 | 360.8 |
| Totals, Finance. ........... 1964 | 289.5 | 51.8 | 341.3 | 20.3 | 5.3 | 25.6 | 309.8 | 57.1 |  |
|  | 355.5 | 57.5 | 413.0 | 25.0 | 7.5 | 32.5 | 380.5 | 65.0 | 445.5 |
|  | Commercial Services |  |  |  |  |  |  |  |  |
| Laundries and dry-cleaners... 19641965 | 2.3 | 8.7 | 11.0 | 1.3 | 4.4 | 5.7 | 3.6 | 13.1 | 16.7 |
|  | 1.6 | 7.2 | 8.8 | 1.1 | 3.8 | 4.9 | 2.7 | 11.0 | 13.7 |
| Theatres.................. 1964 | 0.3 | 1.5 | 1.8 | 1.3 | 0.6 | 1.9 | 1.6 | 2.1 | 3.7 |
|  | 2.9 | 2.4 | 5.3 | 1.5 | 0.6 | 2.1 | 4.4 | 3.0 | 7.4 |
| Hotels........................ 196 | 41.3 | 13.8 | 55.1 | 11.0 | 6.8 | 17.8 | 52.3 | 20.6 | 72.9 |
|  | 63.7 | 16.6 | 80.3 | 10.7 | 7.2 | 17.9 | 74.4 | 23.8 | 98.2 |
| Other commercial services... ${ }_{1965}^{1964}$ | 68.4 | 196.3 | 264.7 | 2.9 | 50.8 | 53.7 | 71.3 | 247.1 |  |
|  | 123.5 | 218.7 | 342.2 | 4.6 | 53.6 | 58.2 | 128.1 | 272.3 | 400.4 |
| Totals, Commercial$\left.\begin{array}{l}\text { Services.................... } \\ \\ \\ \\ 1964\end{array}\right)$ |  |  |  |  |  |  |  |  |  |
|  | 112.3 | 220.3 | 332.6 | 16.5 | 62.6 | 79.1 | 128.8 | 282.9 | 411.7 |
|  | 191.7 | 244.9 | 436.6 | 17.9 | 65.2 | 83.1 | 209.6 | 310.1 | 519.7 |

A summary of the capital expenditures in each province for the years 1964 and 1965 is given in Table 4. Such expenditures represent gross additions to the capital stocks of the province and are a reflection of economic activity in the area, although the actual production of these assets may generate major employment and income-giving effects in other regions. For example, the spending of millions of dollars on oil refineries and pipelines in Western Canada means activity in the steel industries of Ontario as well as construction activity in the western provinces.
4.-Capltal and Repair Expenditures, by Province, 1944 and 1965

Note.-Actual expenditures 1964 ; preliminary actual 1965. (Millions of dollars)

| Province and Year | Capital |  |  | Repair |  |  | Capital and Repair |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Con-straction | Machinery and Equipment | Total | Con-struction | Macbinery and Equipment | Total | Con-struetion | Ms. chinery and Equipment | Total |
| Newfoundland............... 1964 | 154 | 77 | 231 | 28 | 41 | 69 | 182 | 118 | 300 |
| 1885 | 155 | 73 | 228 | 35 | 51 | 86 | 190 | 124 | 314 |
| Prince Edward Island........ ${ }_{1965}^{1964}$ | 26 30 | 13 22 | 39 52 | 8 14 | 5 7 | 13 | 34 44 | 18 29 | 52 73 |
| Nova Scotia................. 1964 | 160 | 110 | 270 | 55 | 51 | 106 | 215 | 161 | 876 |
| 1965 | 199 | 133 | 332 | 57 | 55 | 112 | 256 | 188 | 444 |
| New Brunswick.............. 1964 | 163 | 94 | 257 | 43 | 44 | 87 | 206 | 138 | 344 |
| 1965 | 218 | 121 | 239 | 46 | 45 | 92 | 204 | 167 | 421 |
| Quebee...................... . 1964 | 1,988 | 842 | 2,828 | 379 | 478 | 857 | 2,365 | 1,320 | 3,685 |
| 1965 | 2,281 | 951 | 3,233 | 404 | 498 | 902 | 2,885 | 1,449 | 4,139 |
| Ontario...................... 1964 | 2,249 | 1,498 | 3,747 | 577 | 772 | 1,349 | 2,826 | 2,270 | 5,096 |
|  | 2,567 | 1,782 | 4,349 | 610 | 800 | 1,410 | 3,177 | 2,582 | 5,758 |
| Manitoba................... 1964 | 332 | 195 | 528 | 89 | 102 | 193 | 421 | 293 | 719 |
| Mat. 1965 | 356 | 203 | 559 | 91 | 99 | 190 | 447 | 302 | 749 |
| Saskatchewan. . . . . . . . . . . . 1964 | 381 | 267 | 648 | 95 | 101 | 196 | 476 | 368 | 844 |
| 1965 | 479 | 308 | 787 | 95 | 96 | 191 | 574 | 404 | 878 |
| Alberta...................... 1964 | 753 | 347 | 1,100 | 167 | 155 | 322 | 920 | 502 | 1,428 |
| Aberta 1965 | 879 | 416 | 1,295 | 164 | 164 | 328 | 1,043 | 580 | 1,623 |
| British Columbia. | 800 | 496 | 1,296 | 188 | 253 | 441 | 988 | 749 | 1,737 |
|  | 1,037 | 588 | 1,625 | 187 | 254 | 441 | 1,224 | 842 | 2,066 |
| Totals.................. 1964 | 7,004 | 3,940 |  |  |  |  |  |  | 14,475 |
|  | 8,201 | 4,58\% | 12,298 | 1,703 | 2,680 | 3,273 | 9,504 | 6,647 | 16,571 |

## Section 2.-Construction Statistics

## Subsection 1.--Value of Construction Work Performed

Statistics of the construction industry are based largely on information received at the same time and from the same sources as the data on capital expenditures that appear in Section 1. The data represent the estimated total value of all new and repair construction performed by contractors, by labour forces of utility, manufacturing, mining and logging firms, and by government departments, home-owner builders and other persons or firms not primarily engaged in the construction industry. Table 5 shows the value of new and repair construction work performed during the period 1956-65 and Table 6 shows the value of such work performed by contractors and others in the years 1962-65.

## 5.-Value of New and Repair Construction Work Performed, 1să6-\&5

Notz.-Actual expenditures 1956-64; preliminary actual 1965.

| Year | New | Repsir | Total | Total <br> Constructionas Percentsge of Gross National Product |
| :---: | :---: | :---: | :---: | :---: |
|  | \$'000,000 | \$'000,000 | \$'000,000 | p.c. |
| 1956. | 5,272 | 1,182 1,238 | 6,454 7,023 | 21.1 |
| 1958. | 5,831 | 1,261 | 7,092 | 21.6 |
| 1959 | 5.710 | 1,367 | 7,077 | 20.3 |
| 1960. | 5,454 | 1,432 | 6,886 | 19.0 |
| 1961. | 5,518 | 1,456 | 6,974 | 18.7 |
| 1962. | 5,787 | 1,509 | 7,296 | 18.0 |
| 1968. | 6,157 | 1.559 | 7.716 | 17.8 |
| 1964. | 7,004 | 1.630 | 8,634 | 18.2 |
| 1965. | 8,201 | 1,704 | 9,905 | 19.0 |

6.-Value of Construction Work Performed, by Contractors and Others, 1962-65

Note.-Actual expenditures 1962-64; preliminary actual 1965.
(Millions of dollars)

| Item | 1962 | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: |
| Contraet Construction. | 5,710 | 6,634 | 6,833 | 8,117 |
| New. | 4,900 | 5,213 | 5,937 | 7,113 |
| Repair | 810 | 821 | 896 | 1,004 |
| Other Construrtion ${ }^{\text {1 }}$, | 1,586 | 1,683 | 1,801 | 1,788 |
| New.: | 887 | 944 | 1,067 | 1,088 |
| Repair. | 699 | 738 | 734 | 700 |
| Totals, Construction. | 7,296 | 7,715 | 8,634 | 9,505 |
| New... | 5,787 | 6,157 | 7,004 | 8,201 |
| Hepar. | 1,303 | 1,559 | 1,684 | 1,709 |

[^217] departmenta, homeowner builders and other persons or firms not primarily engaged in the construction industry.

Table 7 gives estimates of total expenditures in Canada on each type of construction for which information is available.

## 7.-Value of Construction Work Performed, by Type of Structure, 1961 and 1965

Note.-Actual expenditures 1864; preliminary actual 1965.

| Type of Structure | 1964 |  |  | 1965 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | New | Repair | Total | New | Repsir | Total |
|  | \$ 000 | \$000 | \$ 000 | \$000 | \$000 | $\$^{\prime} 000$ |
| Resldentlal. | 2,027,500 | 577,000 | 2,604,504 | 2,133,300 | 619,100 | 2,752,400 |
| Industrial. Factories, plants, workehops, food | 522,058 | 144,354 | 666,412 | 615,456 | 146,201 | 761,057 |
| Mine sand miose mill bivilding. ..... | 408,875 | 114,052 | 522,927 | 539.110 | 115,488 | 654,598 |
| Mine and mipe mill buildings...... | 93,487 | 11,009 | 104.496 | 60,769 | 11,835 | 72,604 |
| Railway shops, engine bouses, | 11,540 | 13,262 | 24,802 | 9,414 | 12,449 | 21,883 |
| water and fuel stations........ | 8,156 | 6,031 | 14,187 | 6,163 | 6.429 | 12,592 |

7.-Value of Construction Work Performed, by Type of Structure, 1964 and 1905-continued

| Type of Structure | 1984 |  |  | 1965 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | New | Repair | Total | New | Repair | Total |
|  | \$000 | \$000 | \$'000 | \$'000 | \$ 000 | \$000 |
| Building Construction -concluded |  |  |  |  |  |  |
| Commerelal. | 716,165 | 12\%,800 | 845,966 | 881,423 | 144,489 | 1,025,01\% |
| Warebouses, storebouges, reirigerated storage, etc. | 58,748 | 11,261 | 70,009 | 72,086 | 15,120 | 87,203 |
| Grajn elevatora.................... | 10,641 | 6,526 | 17, 167 | 10,809 | 7.729 | 18,538 |
| Hotels, clubs, restaurants, caleterias, tourist cabing. | 59,230 | 13,467 | 72,697 | 81,591 | 12,658 | 94,249 |
| Office buildings.................... | 325,069 | 44,658 | 389.627 | 381,685 | 57,391 | 439,076 |
| Stores, retail and wholegale.. | 174,913 | 31,085 | 205,948 | 201,903 | 31,860 | 283,763 |
| Garages and service stations...... | 33,709 | 11,438 | 45, 147 | 43,550 | 11,124 | 54,674 |
| Theatres, srenas, amusement and | 51,533 | 10,304 | 61,837 | 88.183 | 7,471 | 95,604 |
| Laundries and dry-cleaning estab- | 2,323 | 1,211 | 3,634 | 1,666 | 1,138 | 2,502 |
| Institutlo | 693,33\% | 22,476 | 745,808 | 988, 343 | 74,094 | 1,007,487 |
| Schools and otber educationai buildinga. <br> Churobes and other religious buitdinga. <br> Hospitals, sanatoris, clinics, firstaid stations, etc.. <br> Other. | 439,616 | 32,867 | 472,483 | 637,584 | 37,710 | 675,294 |
|  | 42,092 | 8,796 | 50,888 | 37.673 | 6,210 | 43,883 |
|  | 150,741 | 22,276 | 179,017 | 175,442 | 22,581 | 198,023 |
|  | 54,883 | 8,537 | 63,420 | 82,644 | 7,593 | 90,287 |
| Other Bullding <br> Farm buildings (exeluding dwellings) | 211,57\% | 85,142 | 236.721 | 246,102 | 84,547 | 390,049 |
|  | 129,384 | 50,260 | 179,644 | 134,853 | 52,743 | 187.696 |
| Brosdcasting, radio and television, relay and booster atstions, telephone exchanges. <br> Aeroplane hangary | 34,821 | 3,090 3,506 | 37,911 4,192 | 36,764 845 | 2,719 $\mathbf{3 , 4 2 7}$ | 39,483 4,272 |
| Aeroplane hangary. <br> Passenger terminals, bus, boat or air. | 5,356 | 863 | 8,219 | 9,902 | 487 | 10,389 |
| Armouries, barracks, drill halls, etc. | 5.754 | 14,409 | 20,163 | 7.870 | 13,600 | 21,270 |
| Bunkbouses, dormitories, camp cookeries, bush depots and camps Miecellaneous. | 13,389 22,189 | 4,808 8,208 | 18,195 30,897 | 22,062 34,006 | 4,517 | 26,579 |
| Totals, Buildtes Construction.. | 4,176,035 | 1,008,7\%2 | 5,179,407 | 4,899,644 | 1,068,431 | 5,878,055 |
| Engineering Construckion |  |  |  |  |  |  |
| Marine. <br> Docks, wharves, piers, breakwaters. | 51,314 | 16,238 | 67,55\% | 79,811 | 18,885 | 98,088 |
|  |  | 8,726 | 46,309 | 59,941 | 10,560 | 70,501 |
| Retaining walls, embankmente, riprapping. | 5,597 | 918 | 6,515 | 4,890 | 1,889 | 6,719 |
| Canals and waterwaya.............. | 2,037 | 1,468 | 4,4056,614 | 2,290 | 1,345 | 7,848 |
| Dredging and pile driving. | 4,409 |  |  |  | -1,395 | 5,685 |
| Dyke constraction..... |  | ${ }^{123}$ | 532 | 2,290 | 3,395 102 | 5,685 |
| Lozting booms. | 537 | 760 | 1,297 | 775$4,228$. | 772882 | 5,110 |
| Other......... | 2,084 | 796 | 2,880 |  |  |  |
| Eoad, Highway and Aerodrome. . Hard surfaced or paved atreets, highways, parking lots, ete. | 770,394 | 194,218 | 964,612 | 910,285 | 188,450 | 1,106,435 |
|  | 506,813 | 109,416 | 616,229 | 864,370 | 134,847 | 799,217 |
| Gravel or stones streets, highways, roads, parking lote, etc.. | 138,951 | 42,848 | 181,799 | 117,101 | 27,962 | 145,063 |
| Dirt, clay or other streets, roads, parking lots, etc.. | $\begin{aligned} & 86,010 \\ & 26,184 \\ & 17,834 \end{aligned}$ | 20,3328.480 | 92,33234,664 | 64,746 <br> 25,909 <br> 18 | $\begin{array}{r} 21,651 \\ 7,310 \\ \mathbf{4}, 121 \end{array}$ | $\begin{aligned} & 86,267 \\ & 33,219 \\ & 3,283 \end{aligned}$ |
| Grading, scraping, oiling, filling.... |  |  |  |  |  |  |
| Sidewalks, paths................. |  | 4,530 | 22,364 | 19,162 |  |  |
| Aerodromes, landing fields, runways, tarmac. | 14,602 | 2,622 | 17,224 | 18,997 | 2,289 | 21,285 |

\%.-Value of Construction Work Performed, by Type of Structure, 1964 and 1965-concluded

| Type of Structure | 1964 |  |  | 1985 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | New | Repair | Total | New | Repair | Total |
|  | \$'000 | \$000 | * ${ }^{7} 000$ | \$'000 | \$ 000 | \$ 000 |
| Englneerlng Construttion |  |  |  |  |  |  |
| Waterworks and Sewarge Systems. | 234,699 | 50,415 | 285,114 | 282, 0\%6 | 47,131 | 329,757 |
| Tile draing, drajnage ditches, storm sewers. | 17,320 | 6,900 | 24, 228 | 20,889 | 8,027 | 28,916 |
| Water mains, hydrants and eervices. | 74,291 | 26,163 | 100,454 | 94, 193 | 23,922 | 118.115 |
| Sewaye systems and connections.. | 129,289 | 13,891 | 143,180 | 139,397 | 9.990 | 149,387 |
| Pumping stations, water........... | 10,612 3,187 | 2,526 | 13,138 4,116 | 20,998 7,149 | 1,941 | 22,939 |
|  | 3,187 | 929 | 4,116 | 7,149 | 3,251 | 10,400 |
| Dams and Itrigation. <br> Dams and reservoirs. | 100,542 | 3,341 | 145,883 | 226,573 | 9,613 | 236,186 |
|  | 143,777 | 2,406 | 146,183 | 198.394 | 2,521 | 200,915 |
| Irrigation and land reclamation projecte. . | 16,765 | 6,935 | 23,700 | 28,179 | 7,092 | 35.271 |
| mlectrie Power Construction. Electric power generating plants, including water conveying and controlling structures | 481,866 | 59,155 | 541,071 | 605,184 | 62,503 | 667,087 |
|  | 156,973 | 13,494 | 170,467 | 249,444 | 14,761 | 264,205 |
|  | 65,321 | 4,220 | 68,541 | 94,063 | 5,103 | 99,186 |
| Power transmission and distribution lines, trolley wires | 243,416 | 32,315 | 275,731 | 245,475 | 36,387 | 281.842 |
| Street lighting...................... | 16,156 | 9,126 | 25,282 | 16,202 | 6,272 | 22,474 |
| Rallway, Telephone and Telegraph............................... Railwsy tracks and roadbed | 254,051 | 157,275 | 411,326 | 244,954 | 159,038 | 404,047 |
| Railway tracks sud roadbed....... | 124,580 | 104,214 | 228,794 | 105,434 | 103,883 | 209,317 |
| Signals and interlockers. Telegraph and telephone lines, underground and marine cables. | 8,356 | $8+835$ | 17,991 | 8,370 | 9,596 | 17,966 |
|  | 120,115 | 44, 426 | 164,541 | 131, 150 | 45,614 | 176,764 |
| Gas and Oil Facilities..............Gas mains and services........ | 478,690 | 68,665 | 546,755 | 507,397 | 48,843 | 576,24* |
|  | 48,056 | 8,247 | 53,303 | 68,449 | 4,859 | 73,308 |
| proping stations, oil............... | 4,014 | 1,903 | 5.917 | 6,603 | 1,52] | 8,124 |
| Pumping stations, gas. | 29,640 | 571 | 30,211 | 2,015 | 465 | 2,480 |
| Oil storage tanks. | 16,836 | 2,513 | 19,349 | 6,752 | 2,653 | 9,405 |
| Gas storage tanks | ${ }_{1}+184$ | ${ }^{76}$ | 1,260 | 9333 | 125 | 1,058 |
| Oil pipelines..... | 24, 65.2 | 2,599 | 27,251 | 33,798 | 1,939 | 35,737 |
| Gas pipelines | 95,538 | 1,308 | 96,846 | 28,842 | ${ }^{1} 953$ | 29,795 |
| Oil wells.. | 170,320 | 16,870 | 187, 190 | 267,087 | 20,450 | 287,543 |
| Gas wells. | 29,872 | 1,296 | 21,168 | 41.771 | 2,963 | 44,734 |
| Oil refinery-processing units......Natural gas cleaning plants....... | 20,090 | 31,840 | 51,930 | 32,536 | 28,477 | 61,018 |
|  | 37,888 | 4,442 | 42,330 | 18,811 | 4,432 | 23,043 |
| Other Englneering. Bridges, treetles, culverts, overpssees, viaducts. Tunnels asd subwayb | 402,659 | 65,800 | 468,519 | 535, | 71,801 | ¢07,051 |
|  | 180.380 | 31,377 | 211,757 | 221, 879 | 30,864 | 252,843 |
|  | 73,440 |  | 73,512 | 75,318 | 74 | 75, 392 |
| Incinerators. <br> Park systemk, landscaping, sodding. etc. | 133 | 21 | 154 | 69 | 15 | 84 |
|  | 5,704 | 4,213 | 9,917 | 10,729 | 5,215 | 15,944 |
| 8wimming pools, tennis courta, outdoor recreation facilities. | 2,148 | 452 | 2.598 | 4,286 | 1,655 | 5,941 |
| Mine shafts and other below surface workings. |  |  |  |  |  |  |
|  | 41,539 | 3,982 | 45,521 | 54,655 | 3,538 | 58,193 |
| Fences, snowsheds, signs, guardtails. <br> Miscellaneous. | 26,922 | 13,712 | 40,634 | 26,311 |  |  |
|  | 72,395 | 12,031 | 84,426 | 141,903 | 17,799 | 159.702 |
| Totals, Enginetring Censtruc* tion. | 2,833,615 | 621,167 | 3,454,782 | 3,391,480 | 635,819 | 4,42\%,359 |
| Totals, All Construction.. | 7,804,250 | 1,639,938 | 8,634,189 | 8,201,104 | 1,704,350 | 9,905,454 |

Principal statistics of the construction industry are shown by province and for contractora, utilities, governments and others in Table 8. The statistics given for Canada as a whole may be considered as relatively accurate but those for individual provinces and
by class of builder are approximations only. All estimates given for cost of materials used are based on ratios of this item to total value of work performed, derived from annual surveys of construction work and applied to the total value-of-work figures. Estimates of labour content are similarly based but, in addition, are adjusted to include working owners and partners and their withdrawals. Although the ratios were calculated in some detail by type of industry, still further refinements are required. There are also some difficulties in obtaining the precise location of projects undertaken or to be undertaken by large companies operating in a number of provinces. However, if used with these qualifications in mind, the table provides useful estimates.

## 8.-Labour Content, Cost of Materials and Value of Work Performed in Construction, by Province and by Employer, 1964 and 1965 with Totals for 1961-65

Note.-Actual expenditures 1961-64; preliminary actual 1965. Comparable figures from 1953 are given in the corresponding table of previous Year Books beginning with the 1957-58 edition.

| Province or Employer and Year | Labour Content |  | Cost of Materials Used | Volue of Work Performed |
| :---: | :---: | :---: | :---: | :---: |
|  | Number | Value |  |  |
| Province |  | \$ 000 | \$'000 | \$000 |
| Newloundland................................ 1964 | 12,542 12,397 | $\begin{aligned} & 55,963 \\ & 57,444 \end{aligned}$ | $\begin{aligned} & 76,674 \\ & 77,621 \end{aligned}$ | $\begin{aligned} & 182,079 \\ & 189,972 \end{aligned}$ |
| Prince Edward Island. ......................... 1964 | 2,537 3,048 | 9,355 11,878 | 15,671 20,327 | $\begin{aligned} & 33,538 \\ & 43,571 \end{aligned}$ |
| Nova Scotis.................................. 1964 | 18,232 19,768 | $\begin{aligned} & 71,940 \\ & 82,765 \end{aligned}$ | $\begin{aligned} & 103,364 \\ & 122,782 \end{aligned}$ | $\begin{aligned} & 215,779 \\ & 255,458 \end{aligned}$ |
| New Brunswick................................. 1964 | 17,224 20,284 | $\begin{array}{r} 67,207 \\ 83,315 \end{array}$ | $\begin{aligned} & 104,490 \\ & 133,269 \end{aligned}$ | $\begin{aligned} & 205,723 \\ & 264,339 \end{aligned}$ |
| Quebea. ........................................... 1964 | 150,163 159,948 | $\begin{aligned} & 755,602 \\ & 847,694 \end{aligned}$ | 1,219,915 | $\begin{aligned} & 2,36.945 \\ & 2,684,688 \end{aligned}$ |
| Ontario........................................... $19.196{ }^{1965}$ | 177,117 187,844 | 957,607 $1,071,410$ | $1,391,038$ $1,569,106$ | $\begin{aligned} & 2,825,132 \\ & 3,177,076 \end{aligned}$ |
| Manitoba....................................... ${ }_{1965}^{1964}$ | 30,579 30,600 | $\begin{aligned} & 142,465 \\ & 150,280 \end{aligned}$ | $\begin{aligned} & 202,272 \\ & 214,848 \end{aligned}$ | $\begin{array}{r} 421,133 \\ 447,699 \end{array}$ |
| Satkatebewan. . . . . . . . . . . . . . . . . . . . . . . . . . . . 19.1964 | $\begin{aligned} & 30,210 \\ & 33,810 \end{aligned}$ | $\begin{array}{r} 146,402 \\ 172,829 \end{array}$ | $\begin{aligned} & 236,652 \\ & 282,137 \end{aligned}$ | $\begin{aligned} & 476,900 \\ & 874,881 \end{aligned}$ |
| Alberta............................................... 1964 | $\begin{aligned} & 58,463 \\ & 56,806 \end{aligned}$ | $\begin{aligned} & 282,535 \\ & 317,583 \end{aligned}$ | $\begin{aligned} & 418,845 \\ & 472,308 \end{aligned}$ | $\begin{array}{r} 919,871 \\ 1,043,640 \end{array}$ |
| British Columbis...............................1964 ${ }_{1965}$ | $\begin{aligned} & 55,316 \\ & 64,308 \end{aligned}$ | $\begin{aligned} & 328,013 \\ & 396,711 \end{aligned}$ | $\begin{aligned} & 472,452 \\ & 588,456 \end{aligned}$ | $\begin{array}{r} 988,089 \\ \mathbf{1}, 224,636 \end{array}$ |
| Totals.... . . . . . . . . . . . . . . . . . . . . . . . . . . . 1951 | 530,854 | 2,849,2*3 | 3,273,513 | 6,974,379 |
| 1952 | 528,921 | 2,475,670 | 3,507,738 | 7,290, 038 |
| 1963 |  | 2,564,877 | 3,736,494 | 7,716,011 |
| 1981 | 517,377 | 2,812,089 | 4,24,373 | $8,64,189$ |
| 1565 | 588,813 | 3,181,909 |  |  |
| Employer |  |  |  |  |
| Contractors................................... 1984.1985 | 397,275 $\mathbf{4 4 6 , 7 4 4}$ | $2,074,701$ $2,459,145$ | $3,441,880$ $4,057,790$ | $\begin{aligned} & 6,833,265 \\ & 8,117,044 \end{aligned}$ |
| Utilities. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 1964 1965 | $\begin{aligned} & 7,042 \\ & 68,632 \end{aligned}$ | $\begin{aligned} & 387,462 \\ & 387,757 \end{aligned}$ | $\begin{aligned} & 448,678 \\ & 446,762 \end{aligned}$ | $\begin{aligned} & 911,663 \\ & 912,199 \end{aligned}$ |
| Governments. . . . . . . . . . . . . . . . . . . . . . . . . . . . 19.1964 | 47,897 44,191 | $\begin{aligned} & 206,617 \\ & 189,585 \end{aligned}$ | $\begin{aligned} & 167.552 \\ & 161.576 \end{aligned}$ | $\begin{aligned} & 504,945 \\ & 485,052 \end{aligned}$ |
| Others. ................................................ 1964 | $\begin{aligned} & 30,163 \\ & 29,246 \end{aligned}$ | $\begin{aligned} & 143,309 \\ & 145,442 \end{aligned}$ | $\begin{aligned} & 185,283 \\ & 188,980 \end{aligned}$ | $\begin{aligned} & 384,316 \\ & 391,159 \end{aligned}$ |

## Subsection 2.--Contracts Awarded and Building Permits Issued

In this Subsection, statistics are given of work actually in sight either as contracts awarded or as building permits. These figures are related to those of work performed during the year only as far as the work thus provided for is completed and duly reported in the capital expenditure surveys. Further, values of contracts awarded, and especially of building permits, are estimates (more often under-estimates) of work to be done.

## 9.-Value of Construction Contracts Awarded, 1946- $\mathbf{5 0}$

(Source: Southam Building Guide)
Nors.-Figures for the years 1926-45 are given in the corresponding table of the 1962 Year Book, p. 682.

| Year | Value of Construction Contracts | Year | Value of Construction Contracta | Year | Value of Construction Contracts |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 8 |  | * |  | \$ |
| 1946. | $663,355,100$ | 1953. | 2,017,060,700 | 1960. | 3,053,749,500 |
| 1947. | 718.187, 100 | 1954. | 2,154,959,200 | 1981. | 3,220,937,300 |
| 1948. | 954,052, 400 | 1955. | 3,183,592,000 | 1982. | 3,351,717,500 |
| 19491. | 1,143,547,303 | 1956. | 3,426,905,500 | 1963. | 3,685,634,300 |
| 1950. | $1,525,764,700$ $2,295,489,200$ | 1957. | $2,889,188,100$ $3,593,709,200$ | 1964 | 4,413,077,400 |
| 1962.. | 1,812,177,600 | 1959. | 3,219,073, 300 |  |  |
|  |  |  |  |  |  |

${ }^{1}$ Newioundland included from Apr. 1, 1949.

## 10.-Value of Construction Contracts A warded, by Province and Type of Construction, 1964 and 1965

(Source: Southam Building Guide)

| Province and Type of Construction | 1964 | 1965 | Type of Construction | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ 000 | 8.000 |  | \$'000 | \% 000 |
| Newfoundtand <br> Prince Edward Island <br> Nova Scotis. | 73,575 | 65,402 | ( $\begin{gathered}\text { Uusiness................... } \\ \text { Churcbeg............ }\end{gathered}$ | $1,652,488$37,785 | 1,251,364 |
|  | 4,721 | ¢, 899 |  |  |  |
|  | 135,604 73,087 | 90,921 | Public garages. | 10,798 | 29,303 |
| Querv Brunswick............... | 1,158,353 | 1,35,761 | Hoppitals. ${ }^{\text {Held }}$ - | 149,911 123,552 | 106,77820073 |
| Ontario...................... | 1, 801,229 | 2,145, 567 | Office buildings. | 306,025 |  |
| Manitobs......................Saskatchewran...........Alberta................. | 188,538 | 241,420 | Public buildinge. | 164.681 | 260,973 141,063 |
|  | 207,480 | 246.619 | Schools......... | 416.303 | 578,120 |
|  | 401,010 | 712,505 | Stores. | 126,737 | 214.650 |
| Artish Columbia |  |  | Theatres | $\begin{gathered} 15,798 \\ 100,898 \end{gathered}$ | $120,279$ |
| Totals. | 4,413,077 | 5,243,664 | Industrial. . . . . . . . . . . . . . . . | 504,505 | 714,598 |
|  |  |  |  | $966,797$ | $\mathbf{1 , 2 5 7 , 9 6 3}$ |
|  |  |  |  | $\begin{array}{r} 111,159 \\ 53,552 \end{array}$ |  |
|  |  |  |  |  | 53,453195, 684 |
|  | $\begin{array}{r} 1,487,285 \\ 667,723 \\ 819,562 \end{array}$ |  | Sewerage and waterworks... | 204,128 |  |
| Residential. <br> Apartments |  | $\begin{array}{r} 1,519,739 \\ 692,745 \\ 826,994 \end{array}$ | Roads and streets...........Power and communications.Miscellaneous.............. | $\begin{aligned} & 264,331 \\ & 123,562 \\ & 210,067 \end{aligned}$ | $\begin{aligned} & 44,225 \\ & 30,251 \\ & 159,490 \end{aligned}$ |
| Residences. |  |  |  |  |  |

Building Permits.-The estimated value of proposed construction is indicated by the value of building permits issued. Figures of building permits issued are collected for more than 1,400 municipalities across the country and are available for the individual municipalities, for metropolitan areas, for provinces and for economic areas in Quebec, Ontario and Manitoba.

The total value of permits issued for construction work exceeded $\$ 3,800,000,000$ for 1965, the highest figure on record and an increase of 16.6 p.c. over 1964. Residential construction was 8.8 p.c. higher, new construction and repairs being up 9.1 p.c. and 1.6
p.c., respectively. Non-residential construction increased 24.2 p.c. over 1964, with increases of 13.0 p.c. in industrial, 31.0 p.c. in commercial and 24.5 p.e. in institutional and government construction. All provinces except Prince Edward Island recorded gains in 1965, the largest percentage increase being reported by Newfoundland. Table 11 shows the value of building permits issued in each of 50 municipalities for 1964 and 1965.

## 11.-Estimated Value of Proposed Construction as Indicated by Bullding Permits Issued in 50 Municipalities, 1964 and 1965

Nort:-Comparable figures from 1056 are given in the correspondiag table of previous Year Books beginning with the 1962 edition.

| Province and Municipality | 19641 | 1965 | Province and Municipality | 1964 | 1905 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$000 | \$'000 |  | \$000 | \$000 |
| Newfoundiand- |  |  | Ontarlo-concluded |  |  |
| St. John's........ | 15,884 | 31,569 | Port Arthur. | 6,976 | 9,787 |
| Prince Edward Island- |  |  | Torborough | 597 167,670 | 92,270 212,184 |
| Charlottetown........ | 7,075 | 4,668 | Toronto Township | 46,080 | 64,092 |
| Nowa S |  |  | Windsor. | 17,839 | 26,590 188.512 |
| Halifax. | 14,858 | 33.515 | York Townehip | 7.642 | 16.997 |
| New Brunswick- |  |  | Manitoba- |  |  |
| Fredericton. | 15,310 | 10,255 | Fort Garry. |  |  |
| Moncton. | 7,164 | 12,158 | St. Bonitace | 97, 158 | 97,1771 |
| Saint John. | 10,332 | 5,564 | St. Jsmes.. | \%,150 | \%,170 |
| Quebec- |  |  | Whapeg |  |  |
| LaSalle. | 11,594 | 21,559 | Saskatchewan- |  |  |
| Montreal. | 243,082 | 300,553 | Moose Jaw. . | 4,195 | 5,778 |
| Quebec. | 15,690 | 23.073 | Prince Albert. | 2,828 | 5,003 |
| St. $\mathrm{I}_{\text {Aurer }}$ | 17.853 | 24,744 | Regina.. | 36.226 | 50, 668 |
| Ste. Foy. | 19,509 | 22,416 | Saskstoon | 35,465 | 41,086 |
| Sept iles | 4,304 | 3,613 17.856 |  |  |  |
| Sherbrooke. | 16,061 | 17,856 | Alberta- |  |  |
| Trois-Rivieres | 5,869 | 7,691 | Calgary., | 85,359 103,111 | 129,028 |
| Ontario- |  |  | Jasper Plac |  | 125,283) |
| Brampton. | 16,923 | 11,001 | Lethbridge | 5,600 | 7,505 |
| Burlington. | 21,811 | 27, 131 | Medicine H : | 4,247 | 3.789 |
| Etobicoke Township | 80,627 | 88,111 | Red Deer | 7,979 | 7,023 |
| Hismilton... | 54, 861 | 61,969 |  |  |  |
| Kitchene | 32,557 | 33,253 | British Columbla- |  |  |
| London. | 50,237 | 52,846 | Burnaby District.... |  |  |
| London Township | - 574 | 17,676 | Richmond Township. | 14,906 11,269 | 28,983 |
| Nepean Township | 22,322 28,808 | 17,294 26,602 | Surrey District | 71, 789 | 84,006 |
| Ottawa. | 106,280 | 106,724 | Vietoria. | 16,997 | 14,918 |

${ }^{1}$ Metropolitan Corporation of Greater Winnipeg.
: Jasper Place included with Edmonton following anneration.

Table 12 shows the value of building permits issued in 17 metropolitan areas across Canada. In 1965 the permits issued in these areas made up 68 p.c. of the total for Canada.

## 12.-Estimated Value of Building Permits Issued in Metropolitan Areas, 1964 and 1965

| Metropolitan Area | 1964 | 1965 | Metropolitan Area | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ 000 | \% 000 |  | \$'000 | \$000 |
| St. John's ${ }^{1}$ | 15,834 | 31,569 | Sudbary | 8,131 | 12, 817 |
| Halitax. | 26, 442 | 43.267 | London... | 52,163 | 56,365 |
| Ssint Jobn | 18,717 | 10,845 | Windsor. | 44,081 | 54,668 |
| Quebec. | 64,156 | 80,343 | Winnipeg. | 97,158 | 97,177 129,730 |
| Montreal... | 540,017 | ${ }^{625}+884$ | Calgary... | $\begin{array}{r}95,969 \\ 114 \\ \hline 167\end{array}$ | 129,730 |
| Ottawa-Hall | 147,658 803,335 | 142,035 736,990 | Edmonton. | 114,167 187,787 | 134, |
| Hamilton | 01.160 | 103,227 | Victoria. . | 186,511 | 35,047 |
| Kitchener | 60,785 | 72,784 |  |  |  |

[^218]13.-Value of Building Permits Issued, by Province, 1964 and 1965 with Totals for 1961-65

Nors.-Comparable figures from 1952 are given in the corresponding table of previous Year Books beginning with the $1957-58$ edition.

| Province and Year | Residential Construction |  |  | Non-residential Construction |  |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | New | Repair | Total | Industrial | Commercial | $\left\lvert\, \begin{gathered} \text { Institu- } \\ \text { tional and } \\ \text { Govern- } \\ \text { ment } \end{gathered}\right.$ |  |
|  | 8000 | \$'000 | \$'000 | \$'000 | \$000 | \$000 | \$000 |
| Newfoundland. .............. 1964 | 8,102 13,255 | 900 884 | 9,002 14,139 | 2,186 1,579 | 41,606 | 5,683 $\mathbf{1 2 , 7 7 6}$ | $\begin{aligned} & 21,770 \\ & 40,100 \end{aligned}$ |
| Prince Edward Island........ ${ }_{1965}^{1964}$ | 1,631 1,400 | 102 101 | 1,732 <br> 1,501 | ${ }_{297}^{185}$ | 1,120 1,547 | 5,366 <br> 4,473 | 8,404 |
| Nova Scotis................. ${ }_{1965}^{1964}$ | 25,967 27,374 | 2,218 2.784 | 28,185 30,108 | 23,398 14,946 | 11,701 10,037 | 16,028 30,676 | 79,310 8567 |
| New Brunswick.............. 19.196 | 17,946 | 1, 1,883 1 1,828 | 19,809 20.602 | 5,310 28,884 | 12,913 8,612 | 15,883 | 83, 8858 7846 |
| Quebec....................... 1964 | 381,535 | 17.993 | 399. 328 | 76.334 | 156,540 | 156.021 | 788,423 |
| 1965 | 423,759 | 20,138 | 443,897 | 77,247 | 250,442 | 127,680 | 899,246 |
| Outario..................... 1964 | 680,420 746,010 | 26,574 26,597 | 706,994 | - 182.512 | 240,220 275,752 | 304,253 400,500 | 1,434,083 |
| Manitoba.................... 1964 | 52,367 | 2,697 2 | 55,064 | 19,218 | 21,664 | 25, 442 | ${ }^{121.388}$ |
| 1965 | 54,643 | 2,753 | 57,896 | 8.083 | 31,073 | 25,655 | 122,207 |
| Baskatchewan................ 1964 | 58,575 <br> 65,215 | 2,876 2,089 | 61,451 67,304 | 7,453 8,347 | 20,348 34,599 | 23,092 39,151 | 112,344 149,401 |
| Alberta...................... 1964 |  |  |  |  | 66,387 | 65,359 | 288, 818 |
| Aberta......................1965 ${ }_{1965}$ | 120,209 | 3,493 | 123.702 | 24,881 | 82, 178 | 117,002 | 348,083 |
| British Columbis............ 1964 | 195.465 | 10,087 | 205.552 | 34,631 | 81,874 | 57,344 | 359,201 |
| Brish Columba.............1965 | 215,773 | 9,740 | 225,513 | 63,769 | 76, 699 | 67,231 | 423,212 |
| Totals................... ${ }^{1961}$ |  |  |  |  |  |  |  |
| 1962 1963 | ${ }_{1,389,923}^{1,14,34}$ | 64,818 72,243 |  | 218,138 | $469,56$ $460,122$ | 619,902 616,890 |  |
| 1964 | 1,54,586 | 69,238 | i, 1141,824 | 380, 842 | 597,536 | 674,419 | 3,267, 21 |
| 1965 | 1,685,412 | 30,357 | 1,756,769 | 430,324 | 782,845 | 833,662 | 3,809,60 |

The indexes given in Table 14 show as far as possible the fluctuations in building costs and their effect on construction work and employment. They are designed to measure price changes of the major inputs-material and labour-but do not reflect price variations of other inputs such as engineering fees, architects' fees, construction equipment and profits. The relative proportions of material and wage costs in general building are difficult to determine since such proportions vary with the type of building and the locality. Also, technological progress and changes in productivity might possibly affect the relative importance of the components of these price series.

## 14.-Index Numbers of Prices of Building Materials, and Wage Rates and Employment in Construction Industries, 1356-65

(Av. $1949=100$ )

| Year | Prices of Building Materials |  | Wage Rates in Construction Industries | Employment in Building Construetion |
| :---: | :---: | :---: | :---: | :---: |
|  | Residential | $\begin{aligned} & \text { Non- } \\ & \text { residential } \end{aligned}$ |  |  |
|  | 128.5 | 128.0 | 152.4 | 145.5 |
| ${ }_{1958}^{198 . . . . . . . . . . . ~}$ | 128.4 127.3 | 130.0 129.8 |  | 147.7 130.1 |
| ${ }^{1959}$........ | 130.0 | 131.7 | 183.4 | 136.5 |
| $1980 . . .$. | 129.2 | 132.3 | 195.5 | 128.6 |
| 1981. |  | 131.1 | 199.7 | 122.5 |
| 1982.......... | 1129.7 | 1331.9 | 20, 7 | 1278.7 |
| 1964 ................ | ${ }_{142.5}^{13.9}$ | ${ }_{139.6}^{135.1}$ | 214.6 224.5 | ${ }_{138.2}^{129.1}$ |
| 1985.... | 148.9 | 146.8 | 235.5 | 154.1 |

[^219]
## Section 3.-Housing*

## Subsection 1,-Government Aid to House-Building

Federal Assistance.-The role of the Federal Government in housing has expanded progressively since the introduction of the first continuing statute in 1935. Although the Government originally entered the housing field in 1918, when it made money available to the provinces for re-lending to municipalities for housing purposes, the first general piece of federal housing legislation was the Dominion Housing Act passed in 1935. This was followed by the National Housing Acts of 1938 and 1944, culminating in 1954 with the present National Housing Act, defined as "an Act to promote the construction of new houses, the repair and modernization of existing houses and the improvement of housing and living conditions" Central Mortgage and Housing Corporation (CMHC), a Crown agency incorporated by Act of Parliament in 1945, administers the National Housing Act and co-ordinates the activities of the Federal Government in housing. The Corporation has the authority and responsibility for a variety of functions affecting housing in its long-term outlook as well as in its immediate requirements. It is empowered to act as an insurer of mortgage loans, as a lender or investor of public funds, as a guarantor and as an owner of property and other assets. It also acts as a research agency in fields associated with housing and assists provinces and municipalities in many aspects of urban growth. In general, the Government, through the successive Housing Acts, has attempted to stimulate and supplement the market for housing rather than assume direct responsibilities that rightfully belong to other levels of government or that could be borne more effectively by private enterprise. In each case the aim has been to increase the flow of mortgage money and to encourage lenders to make loans on more favourable terms to prospective home owners.

The volume of house-building in Canada since 1935 has been spectacular. Close to half of the country's present stock of approximately $5,200,000$ houses have been built since the first covering legislation was enacted; about one third of these were financed in one way or another under the Housing Acts.

Under the terms of the National Housing Act, 1954 and its subsequent amendments, the Federal Government is active in many ways.

Loan Insurance.-Mortgage loans made by approved lenders may be insured for new home-ownership and rental housing and for existing dwellings in approved urban renewal areas. They are normally available from approved lenders (chartered banks and life insurance, trust and loan companies) to individual home-owner applicants, to builders constructing houses for sale or for rent, to rental investors and to special groups such as co-operative housing associations and farmers. Upon application, the borrower pays CMHC a fee of $\$ 35$ per unit to help defray expenses incurred in the examination of plans and specifications, in the determination of lending values and in compliance inspections during construction. An approved lender requires evidence that a home owner or home purchaser is providing 5 p.c. of the value of the house from his own resources. For the home owner this equity may be in the form of cash or a combination of cash, land and labour; for the home purchaser it may be in cash or labour. The regulations require that gross debt service-the ratio of repayments of principal and interest plus municipal taxes

[^220]to the income of the borrower-should not exceed 27 p.c., although instances involving higher ratios may be considered on their merits. The borrower pays an insurance fee which is added to the amount of the loan and is repaid over the term of the mortgage; the fee ranges from $1 \frac{3}{4}$ p.c. to $2 \frac{1}{2}$ p.c. of the loan, according to type of unit and time of mortgage advances.

For home-ownership housing, loans may be up to 95 p.c. of the first $\$ 13,000$ of lending value and 70 p.c. of the balance but may not exceed a maximum of $\$ 18,000$. Loans for rental houses may be up to 85 p.c. of the lending value, subject to the same maximum loan amount. The maximum loan available for apartment multiple-family dwellings is $\$ 12,000$ per family housing unit. The period for loan repayment is usually 25 years but may be extended to 35 years if the lender agrees. Repayments are made in equal monthly instalments which include payment of interest and loan principal. The total monthly payment includes one twelfth of the estimated muniepal taxes. The interest rate is prescribed by the Governor in Council; on Jan. 10, 1966, it was increased from $6 \frac{1}{2}$ p.c. to 62 p.c.

Direct Loans.-CMHC may make direct loans for both home-ownership and rental housing where, in the opinion of the Corporation, loans are not available through approved lenders. Loans are made to any eligible home-owner applicant but direct loans to builders are subject to a requirement that the houses be pre-sold to satisfactory purchasers. Since 1963, loans not subject to pre-sale condition have been made available to support housebuilding during the winter months. By the end of 1965 , direct lending by the Corporation totalled approximately $\$ 2,702,203,000$. The amount that may be advanced for this purpose out of the Consolidated Revenue Fund is $\$ 3,250,000,000$.

CMHC, with Government approval by Order in Council, may make loans to nonprofit corporations and limited-dividend housing companies to assist in financing the construction of low-rental housing projects or in the purchase of existing buildings and their conversion into low-rental housing projects. In addition to self-contained units, developments undertaken by non-profit corporations may include hostel or dormitory accommodation for the elderly and low-income individuals. The dividends of a limiteddividend company are restricted by the terms of its charter to 5 p.c. or less of paid-up share capital. Loans may be up to a maximum of 90 p.c. of the lending value established by CMHC. The period for repayment may not exceed the useful life of the project and in any case may not be for more than 50 years. The interest rate is eatablished by Order in Council. Plans and specifications for such projects must be approved by the Corporation as well as financing and operating arrangements.

Since December 1960, the National Housing Act has provided financial assistance for the elimination or prevention of water and soil pollution. CMHC is authorized to make a loan to a province, municipality or a municipal sewerage corporation for the construction or expansion of a central plant for the treatment and disposal of sewage wastes and the construction of one or more trunk collector sewers. The loan may not exceed two thirds of the cost of the project and the maximum repayment term is 50 years from date of completion. The interest rate is prescribed by the Governor in Council. The agreement covering the project contains a condition whereby 25 p.c. of the loan principal and 25 p.c. of the accrued interest will be forgiven for projects completed to the satisfaction of CMHC on
or before Mar. 31, 1967.* Where construction is not completed before that date, 25 p.c. of the loan advanced or warrantable by construction progress at that date, plus 25 p.c. of the accrued interest on advances, may be forgiven.

Long-term loans to universities, colleges, co-operative associations and charitable corporations are authorized under the Act for the construction of university housing projects or the acquisition of existing buildings and their conversion into a university housing project. CMHC may lend up to 90 p.c. of the project cost, subject to maximum amounta as follows: houses, $\$ 18,000$; self-contained apartments, $\$ 12,000$ per unit; and hostels, $\$ 7,000$ per person accommodated. Term of the loan may not exceed 50 years. The interest rate is prescribed by the Governor in Council.

Guarantees.-CMHC is authorized to give a limited guarantee to banks or approved instalment credit agencies in return for an insurance fee paid by the borrower on loans made for additions, repairs and alterations to existing houses and apartments. A home improvement loan and the balance owing on any existing NHA home improvement loan on the property may not exceed $\$ 4,000$ for a one-family dwelling or $\$ 4,000$ for the first unit of a duplex, semi-detached or multiple-family dwelling, plus $\$ 1,500$ for each additional unit. Loans are repayable in monthly instalments, together with interest at the rate of 6 p.c., in not more than 10 years.

Public Housing.-Under the National Housing Act and complementary provincial legislation, the Federal Government and the government of a province may enter into a partnership agreement to build rental housing for families and individuals of low income or purchase and rehabilitate existing housing for this purpose. Projects may include hostel or dormitory accommodation in addition to self-contained units. The Federal Government pays up to 75 p.c. of the capital costs and the provincial government the remainder, although the latter may call upon the municipality concerned to bear a portion of the provincial share. Rents for units in federal-provincial projects are related to the tenant's family income and size of family and operating deficits are shared on the same contractual basis as the capital costs. The Federal Government and the government of a province may also enter into an agreement to provide for a land assembly project which involves the development of raw land for housing purposes. Such projects are financed in the same manner as federal-provincial housing projects.

As an alternative method of producing public housing, the CMHC is empowered to make long-term loans to a province, or to a municipality or public housing agency with the approval of the province, for the provision of housing accommodation. Projects may consist of new construction or existing buildings and include dormitory and hostel accommodation as well as self-contained family units. Loans may be up to 90 p.c. of the total cost as determined by CMHC and for a term as long as 50 years but not in excess of the useful life of the development. The maximum that may be borrowed for a house is $\$ 18,000$, for a fully serviced apartment $\$ 12,000$, and for hostels or dormitories $\$ 7,000$ for each person accommodated. The interest rate is set by the Governor in Council.

Federal grants may be made covering up to 50 p.c. of losses incurred in the operation of public housing projects, for a period of up to 50 years but not exceeding the useful life of the project. Loans may be made to assist proponents of public housing projects to acquire land for future projects, the maximum loan being 90 p.e. of the cost of acquiring and servicing the property.
*Extended to Mar. 31, 1970 by 1966 amendment to the Act.

Urban Renewal.-Federal grants and loans are available under the Act to assist provinces and municipalities undertaking programs of urban renewal. CMHC, with Federal Government approval, may arrange with a municipality to undertake a study to identify blighted areas, determine housing requirements and provide data upon which an orderly program of conservation, rehabilitation and redevelopment can be based. The federal contribution may be as much as 75 p.c. of the cost. The legislation also authorizes federal contributions equal to one half of the costs of preparing an urban renewal scheme setting out proposals for urban renewal action, a similar cost-sharing arrangement for the implementation of a scheme, and loans up to two thirds of the provincial or municipal share of the cost of carrying out an urban renewal scheme. Loans may be for 15 years at an interest rate prescribed by the Governor in Council. To encourage the improvement and conservation of housing meeting minimum standards of construction, loans are available for the sale, purchase or refinancing of existing housing in urban renewal areas not designated for demolition.

CMHC Building.-The Corporation may construct and administer housing and certain other buildings on its own account and for other government departments and agencies. Its responsibilities include the provision of architectural and engineering designs, the calling of public tenders and the administration of construction contracts-including any necessary on-site surveying and engineering. On such contracts the Corporation carries out full architectural and engineering inspections.

Research.-CMHC is concerned with building technology in the formulation of standards for housing construction, in the use of suitable materials and in the development of new building techniques. The Corporation has no laboratory facilities but has direct experience of performance in the field and seeks the advice of specialists in various agencies and departments of the Federal Government in such matters. Research into the factors affecting housing is concerned with the measurement of the demand for new housing, the volume of new housing built and the supply of mortgage money for house construction. The Corporation also co-ordinates and publishes statistical information on housing. Funds provided under the National Housing Act support the activities of the Canadian Housing Design Council, the Community Planning Association of Canada and the Canadian Council on Urban and Regional Research.

Other Federal Legislation.-The Farm Credit Act, 1959 provides for federal long-term loan assistance for housing as well as for other farm purposes (see pp. 460-461); the Veterans' Land Act, 1942 provides a form of loan and grant assistance to veterans for housing and other purposes (see pp. 335-336); and the Farm Improvement Loans Act, 1944 (see pp. 458-459) provides for guarantees for intermediate- and short-term loans made by approved lending agencies to farmers for housing and other purposes. These three statutes are concerned only incidentally with housing.

Provincial Assistance.-All provinces have complementary legislation providing for joint federal-provincial housing and land assembly projects and, in addition, most provinces have enacted separate legislation with respect to housing. Details of such assistance may be secured from the provincial government departments listed in the Directory of Sources of Official Information included in Chapter XXVII under the heading of "Housing".

## Subsection 2.-Housing Activities in 1965-66

Housing production in Canada reached a record high in 1965. The 166,565 housing starts represented a slight increase over the 1964 total of 165,658 and completions, numbering 153,037 , surpassed the previous year's volume of 150,963 by 1.4 p.c. Investment in new housing amounted to $\$ 2,133,000,000$, a gain of 5.2 p.c. over the 1964 total of $\$ 2,028,000,000$.

The increase in housing starts took place, as it has since 1962, in apartments and other rental units. Starts of apartment and row dwellings in 1965 reached 83,200 units, representing 50 p.c. of the total and an increase of 4.2 p.c. over the 79,873 units reported during 1964; in the latter year the gain was 25.6 p.c. and in 1963 it was 42.3 p.c. In urban centres, rental dwellings accounted for more than one half of all housing starts for the second successive year.

Starts of dwellings intended primarily for owner-occupancy declined by 2.8 p.c. from 85,785 in 1964 to 83,365 units in 1965. As in the two preceding years, nearly 35 p.c. of the single dwellings were started in the last three months of the year as a result of the Federal Government's winter house-building incentive program and the extended direct lending operations of CMHC. A downward trend, due mainly to a developing shortage of mortgage money, became evident in late 1965 and continued throughout 1966. For the first six months of that year, starts numbered 57,823 compared with 68,510 in the same months of 1965 .
15.-Dwelling Units Started and Completed, by Type of Financing, 1956-65 and by Region, 1964 and 1965
(Exclusive of the Yukon and Northwest Territories)

| Year and Region | Dwelling Units Started |  |  |  |  | $\begin{aligned} & \text { Dwelling } \\ & \text { Units } \\ & \text { Completed } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | National Housing Act |  | Conventional <br> Institutional Loans | All Other Financing | Total |  |
|  | CMHC | Approved Lenders Loans |  |  |  |  |
|  | No. | No. | No. | No. | No. | No. |
| 1956. | 2,712 | 40,149 | 35,687 | 48,763 | 127,311 | 135,700 |
| 1957. | 22,331 | 23,971 | 32,866 | 43,172 | 122,340 | 117,283 |
| 1958. | 35,781 | 44,533 | 42,929 | 41,389 | 164,632 | 146, 686 |
| 1959. | 35,229 | 26,596 | 45,198 | 34,322 | 141,345 | 145,671 |
| 1960. | 13,788 | 18,923 | 40,116 | 36,031 | 108,858 | 123,757 |
| 1961. | 23,852 | 35,334 | 38,316 | 28,075 | 125,577 | 115,608 |
| 1962. | 15,633 | 31,790 | 54,214 | 28,458 | 130,095 | 126,682 |
| 1963. | 21, 213 | 28,505 | 71,983 | 26,923 | 148,624 | 128,191 |
| 1964. | 28,728 | 26,118 | 85,090 | 25,722 | 165,658 | 150,963 |
| 1965. | 30,091 | 24,172 | 88,669 | 23,633 | 166,565 | 153,037 |
| 1964 |  |  |  |  |  |  |
| Atlantic Provinces.. | 836 | 653 | 4,440 | 3,448 | 9,387 | 8,100 |
| Quebec... | 8,115 | 2,569 | 25,653 | 6,857 | 43,194 | 43,658 |
| Ontario. | 8,822 | 19,167 | 31,914 | 5,714 | 65,617 | 57,739 |
| Prairie Provinces. | 8,170 | 2,772 | 8,688 | 6,165 | 25,795 | 24,685 |
| British Columbia. | 2,785 | 947 | 14,395 | 3,538 | 21,665 | 16,781 |
| 1965 |  |  |  |  |  |  |
| Atlantic Provinces. | 1,071 | 380 | 4,027 | 3,466 | 8,944 | 8, 953 |
| Quebec.. | 9,756 | 1,958 | 28,068 | 4,655 | 44,437 | 42,565 |
| Ontario........ | 7,938 | 18,548 |  |  | 66,767 | 56,568 |
| Prairie Provinces. British Columbia. | 7,637 3,689 | 2,167 1,119 | 8,937 13,118 | 6,278 3,472 | 25,019 21,398 | 24,766 20,185 |
| British Columbia.. | 3,689 | 1,119 |  |  | 21,398 |  |

## 16.-Dwelling Units Started in Metropolitan and Major Urban Areas, 1984 and 1965

| Area | $\begin{gathered} \text { Population } \\ \text { (Census } \\ \text { 1981) } \end{gathered}$ | Dwelling Units Started |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 1964 | 1985 |  |  |  |
|  |  |  | Total | Single Detached | Semidetacbed and Duplex | Row and Apartment |
|  | '000 | No. | No. | No. | No. | No. |
| Metropolitan Areas- |  |  |  |  |  |  |
| Calgary. | 279 | 3,887 | 4,178 | 2,335 | 366 | 1,477 |
| Edmonton. | 337 | 4,479 | 4,581 | 2,776 | 88 | 1,717 |
| Halifax... | 184 | 1,688 | 1,655 | ${ }^{422}$ | 160 | 1.073 |
| Hamilton. | 395 | 5,670 | 4,519 | 2,056 | 40 | 2,423 |
| Kitehener. | 155 181 | 3,173 2,668 | 2,820 2,465 | 1,168 | 140 | 1,580 1,288 |
| Montreal | 2,130 | 27.038 | 29,182 | 6,371 | 1,383 | 21,428 |
| Ottawa-Hull | 430 | 5,711 | 5,051 | 1.691 | 317 | 3,043 |
| Quebec. | 358 | $4+257$ | 4,228 | 2,232 | 220 | 1,776 |
| Saint John, | 96 | 1,011 | 736 | 395 | 94 | 247 |
| St. John's.. | 91 | 449 | 556 | 446 | 70 | 40 |
| Sudbury.. | 111 | 271 | 309 | 277 | 2 | 30 |
| Toronto.. | 1,824 | 28.810 | 32,506 | 7.101 | 1,985 | 23,420 |
| Vancouver | 790 | 12,79t | 11,684 | 3,923 | 172 | 7,589 |
| Victoria. | 154 | 2,674 | 1,810 | 819 | 40 | 751 |
| Windsor. | 193 | 1,125 | 1,523 | 864 | 8 | ${ }^{651}$ |
| Winnipeg | 476 | 4.189 | 3,898 | 1,849 | 220 | 1,829 |
| Totals, Metropolitan Areas. | 8.164 | 109,891 | 111,502 | 35,763 | 5,372 | 70,862 |
| Major Urban Areas- |  |  |  |  |  |  |
| Brantiord.. ......... | 57 | 575 | 613 | 342 | 4 | 267 |
| Chicoutimi-Jonquière | 105 | 434 | 355 | 233 | 18 | 108 |
| Drummondville.......... | 39 | 317 | 408 | 206 | 29 | 173 |
| Fort William-Port Arthur | 93 | 534 | 525 | 492 | 12 | 21 |
| Gutelph.. | 42 | 612 | 586 | 295 | 4 | 287 |
| Kingston. | 63 | 785 | 1,203 | 459 | 46 | 698 |
| Moncton. | 55 | 492 | 464 | 237 | 24 | 203 |
| Niagars Falis. | 55 | 290 | 282 | 199 | 74 | 93 |
| Osbawa.... | 81 50 | 1.591 | 2,164 | 888 | 74 | 1,202 |
| Regina. | 112 | 1,985 | 1,688 | 1,055 | 120 | 513 |
| St. Catharines | 95 | 1,481 | 1,308 | 814 | 20 | 474 |
| St. Jean.... | 35 | 180 | 130 | 64 | 16 | 50 |
| Sarnia... | 61 | 484 | 565 | 367 |  | 198 |
| Saskatoon.. | 96 | 1,526 | 1,784 | 915 | 118 | 751 |
| Sault Ste. Maric. | 58 | 616 | 325 | 309 | 2 | 14 |
| Sbewinigan. | 64 | 134 | 61 | ${ }^{53}$ | 8 |  |
| Sherbroake....... | 70 | 1,017 | 713 | 265 | 86 | 362 |
| Sydney-Glace Bay | 108 | 237 | 265 | 211 | 8 | 48 |
| Timmine.......... | 40 84 | 82 428 48 | 1111 | 97 391 | 8 48 8 | 47 |
| Valleyfield.... | 30 | 177 | 194 | 134 | 38 | 24 |
| Totals, Major Urban Areas. | 1,492 | 14,367 | 14,584 | 8,25\% | 673 | 5,669 |
| All Other | 8,545 | 41,400 | 40,529 | 31,426 | 1,874 | 7,229 |
| Canadas | 18,201 | 165,658 | 186,565 | 75,441 | 7,924 | 85,200 |

[^221]Operations under the National Housing Act.-NHA mortgage loans amounting to $\$ 781,575,000$ were approved in 1965 for the construction of 59,458 dwellings, compared with loans of $\$ 729,234,000$ approved for 58,136 units in 1964 . Direct lending by CMHC surpassed the volume of insured loans by approved lenders operating under the Act; loans by the federal agency, involving 33,942 units, had a value of $\$ 461,396,000$. As in 1964 , the highest level of direct lending by CMHC was reached in the last quarter of the year, when prospective home owners could take advantage of the $\$ 500$ bonus payment offered under the Federal Government's winter house-building incentive program.

Loans made available through private lenders in 1965 amounted to $\$ 320,179,000$ for 25,516 dwellings. With the approval of loans for 15,974 units, trust companies were the largest source of funds; lending activity by life insurance companies represented 8,529 dwellings. More than 65 p.c. of all the housing started during 1965 was financed by conventional mortgage loans, accounting for 111,723 dwelling starts compared with 110,309 in 1964.

Mortgage money was in plentiful supply during the first half of 1965, as it had been throughout most of the previous year, and in this period starts were 8.3 p.c. above the number for the corresponding months of 1964. However, after July, funds became scarce for some types of loans and were virtually unavailable toward the end of the year. The reduction in the over-all flow of mortgage funds from lending institutions led to more stringent lending terms, including an increase in interest rates. In the first half of 1966, loans were approved for the construction of 20,136 new dwellings compared with 21,733 new dwellings in the same period of 1965 , a decrease of 7.6 p.c.

17--Mortgage Loans Approved by Lending Institutions, by Type of Property and of L02n, 1356-65

| Year | New Housing |  | Eristing Houes | Other Property | Tota! |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | NHA Loans | Conventional Losns | Conventional Loans | Conventional Loans |  |
|  | \$ 000,000 | $8{ }^{\prime} 000,000$ | \$000,000 | \$'000,000 | \$'000,000 |
| 1956. | 425 | 255 | 177 | 141 | 998 |
| 1957. | 278 | 239 | 150 | 104 | 771 |
| 1958... | 519 | 291 | 208 | 174 | 1,192 |
| 1959. | 308 242 | 343 307 | 216 221 | 216 263 | 1,083 1,033 |
| 1961 | 453 | 333 | 309 | 298 |  |
| 1962.... | 412 | 450 | 358 | 311 | 1,531 |
| 1963.. | 385 | 652 | 430 | 373 | 1,840 |
| 1964. | 353 | 812 | 640 | 507 | 2,312 |
| 1985. | 320 | 992 | 749 | 581 | 2,552 |

Borrower and House Characteristics.-Applicants for NHA loans in 1965 had an average income of $\$ 6,655$ compared with $\$ 6,375$ in 1964 . The average income of purchasers who obtained loan assistance through approved lenders operating under the Act was $\$ 7,063$ and of those who obtained direct loans from CMHC, $\$ 6,450$. The cost of the average NHA-financed house, at $\$ 16,531$, was approximately $\$ 700$ higher in 1965 than in 1964 Down payments, including any secondary financing, averaged $\$ 2,999$ above the $\$ 2,700$ average for the previous year. For a large portion of borrowers, the $\$ 500$ bonus available under the federal winter house-building incentive program was applied to the down payment requirement. On the average, payments of mortgage principal and interest, together with taxes, represented 21.4 p.c. of the borrower's income, virtually unchanged from 1964. The average age of borrowers was 34.6 years and 58.5 p.c. of the families had one or two children. More than 71 p.c. of the borrowers were purchasing a house for the first time.

Three of every four houses constructed were bungalows, 17 p.c. were split-level dwellings and the remainder were mainly two-storey units. There was a small increase in the size of the average dwelling financed under the NHA-from $1,218 \mathrm{sq}$. feet in 1964 to 1,226 sq. feet in 1965.

Loans to Non-profit Corporations and Limiled-Dividend Companies.-In 1965, 56 loans in an aggregate amount of $\$ 14,213,000$ were approved to non-profit corporations to assist in the construction of 1,175 self-contained units of low-rental housing and hostel accommodation for 1,293 persons. Of the total, 1,134 units were intended for occupancy by elderly people and 41 by low-income families. In 1964, 44 limited-dividend loans to nonprofit housing companies and private entrepreneurs were approved for the construction of 1,861 dwellings.

Home Improvement Loans.-There was a slight decline in the volume of NHA-guaranteed bank loans for home improvement purposes in 1965. Loan approvals during the year numbered 18,846 for $\$ 35,589,000$ as against 19,800 and a value of $\$ 36,000,000$ in 1964 . At the end of 1965 , the outstanding debt on such loans was reported by the banks at $\$ 73,200,000$ compared with $\$ 72,100,000$ a year earlier. The Home Improvement Loan Insurance Fund, comprised of fees received from borrowers, increased by $\$ 252,000$ during the year to reach $\$ 3,017,000$ at Dec. 31, 1965.

Loans for University Housing Projects,--Loans totalling $\$ 23,901,000$ were approved in 1965 for 22 university housing projects providing accommodation for 4,547 students, a decrease from 1964 activity when assistance was authorized for developments housing 7,377 students. Loans approved in 1965 were distributed provincially as follows:-

| Province | Lamb | Amount | $\begin{gathered} \text { Studonts } \\ \text { to be } \\ \text { Accommodoted } \end{gathered}$ |
| :---: | :---: | :---: | :---: |
|  | No. | \$000 | No. |
| Nova Scotia. | 2 | 991 | 160 |
| New Brunswick. | 2 | 1,485 | 426 |
| Quebec.......... | 5 | 4,648 | 760 |
| Ontario....... | 10 | 16,104 | 3.020 |
| Alberta Brit......... | $\frac{1}{2}$ | 335 340 | 52 129 |
| Britibi Columbia. | 2 | 340 | 129 |

From December 1960, when university housing loans were first authorized, to December 1965, 116 loans totalling $\$ 137,809,000$ were approved for the construction of residences for 26,947 students. In June 1965, the statutory limit that may be advanced for such loans was increased from $\$ 150,000,000$ to $\$ 200,000,000$.

Loans for Municipal Sewage-Treatment Projects.-During 1965, 180 loans amounting to over $\$ 27,337,000$ were authorized to assist 162 municipalities to undertake sewage-treatment projects, distributed provincially as follows:-


From December 1960, when the Act was amended to provide assistance for sewage-treatment projects, to December 1965, 932 loans totalling $\$ 172,285,000$ were approved to 677 municipalities.

Mortgage Marketing.-Sales of NHA-insured mortgages amounted to $\$ 136,400,000$ in 1965 as compared with a 1964 amount of $\$ 150,200,000$. The 1965 total included $\$ 80,800,000$ in sales througb three mortgage auctions held by CMHC to promote the development of a secondary mortgage market. From June 1961, when the first mortgage auction was held by the Corporation, to the end of December 1965, sales by CMHC to members of the Investment Dealers' Association of Canada, NHA-approved lenders and their approved correspondents totalled $\$ 308,600,000$. Such sales are subject to the conditions that the mortgages be resold or used as collateral for securities backed by NHA mortgages.

Urban Renewal.-Total federal assistance for urban renewal amounted to $\$ 4,134,000$ in 1965 , compared with $\$ 10,517,000$ in 1964 . Net contributions estimated at $\$ 3,200,000$ were approved for the cities of Saint John, N.B., Montreal, Que., Kingston, Ottawa and Toronto, Ont., Regina, Sask., and Victoria, B.C., for the implementation of urban renewal schemes. Those for Saint John, Kingston and Ottawa will assist in the installation of municipal works and services in projects where federal contributions for acquisition and clearance had been approved under the previous legislation. For the Kingston project, CMHC approved the first loan under a 1964 amendment to the NHA for mortgage loan assistance for existing dwellings in urban renewal areas.

Since 1955, when the urban renewal study legislation was first enacted, 75 studies have been approved in communities large and small across the country. Reports of studies undertaken by Dartmouth, N.S., Joliette, Que., Niagara Falls and Trenton, Ont., Moose Jaw, Sask., and Dawson Creek, B.C., were completed and published in 1965. During that year, more urban renewal study contributions were approved than in any other year. They totalled $\$ 324,470$ and included initial grants to the municipalities of Wabana, Nfld., Amherst, Lunenburg, Pictou and Windsor, N.S., Chomedey and Drummondville, Que., Brantford, Fort Frances, Kenora, London, St. Thomas, Timmins and Welland, Ont., Brandon, Man., Estevan, Sask, Lethbridge, Alta., and Chemainus, Natal, New Westminster and Vancouver, B.C. During 1964, five grants totalling $\$ 68,035$ were approved for this purpose.

Federal contributions totalling $\$ 610,000$ for the preparation of 26 urban renewal schemes were approved during the year, including initial contributions for the municipalities of St. John's and Corner Brook, Ntd., Amberst and Dartmouth, N.S., Moncton and Saint John, N.B., Hull, Montreal and Trois-Rivières, Que., Kitchener, London, Mount Joy, Port Arthur, Sault Ste. Marie, Sudbury and Toronto, Ont., Winnipeg, Man., Calgary and Edmonton, Alta., and Burnaby, B.C.

Public Housing.-Approval was given during 1965 for the development under federalprovincial partnership arrangements of public housing projects in St. John's, Nfld, Yarmouth, N.S., and Kingston and Toronto, Ont. These projects will provide a total of 324 dwelling units for low-income families and elderly persons. Since the initial project was authorized in 1950, public housing developments comprising more than 12,500 units have been approved.

Forty-seven loans amounting to $\$ 36,100,000$ were approved to Ontario Housing Corporation for loan-assisted public housing projects comprising 2,919 units. Of these, 1,601 were made up of existing units and the remainder, 1,318 , through new construction. The annual 50 -p.c. federal contribution toward operating losses for the projects is estimated at $\$ 765,000$.

Land Assembly.-Three land assembly projects were approved under federal-provincial arrangements in 1965. The developments, located at Gander, Nfld., Arnprior, Ont., and Prince Rupert, B.C., will provide a total of 662 serviced building lots. From the inception of the program in 1948 to the end of 1965, a total of 18,929 lots had been authorized for development and 12,043 had been sold.

## Subsection 3.-Housing Statistics of the 1961 Census*

The tremendous upsurge in building construction in the 1951-61 decade is reflected in the 1961 Housing Census resultst which recorded $1,145,198$ more occupied dwellings in 1961 than in 1951, the total for Canada in the later year being 4,554,493. The rate of increase in occupied dwellings of 33.6 p.c. exceeded the population increase of 30.2 p.c. in the same period.

Table 18 gives a summary of housing characteristics for Canada in 1951 and 1961. In this period both owned and rented dwellings increased by about one third and single detached dwellings and apartments and flats increased at about the same proportionate rate. The median value of homes was $\$ 11,021$ in 1961 and the median monthly cash rent \$62. Almost two out of five dwellings were constructed in the postwar period, a fact reflected in part in the proportion of dwellings in need of repair, which dropped from 13.4 p.c. in 1951 to 5.6 p.c. in 1961.

[^222]
## 18.-Housing Characteristics, Censuses of 1951 and 1961

| Item | 1951 | $\begin{gathered} \text { P.C. } \\ \text { of } \\ \text { Total } \end{gathered}$ | 1961 | P.C. Total |
| :---: | :---: | :---: | :---: | :---: |
| Totals, Occupied Dwellings ........................... No. | 3,469,293 | 10.* | 4,554,483 | 100.t |
| Tenure- |  |  |  |  |
|  | $2,236,955$ $1,172,340$ | 65.6 34.4 | $3,005,587$ $1,548,906$ | 66.0 34.0 |
| Type- |  |  |  |  |
|  | 2,275,615 | 66.7 26.0 | $2,978,501$ $1,251,098$ | 65.4 25.3 |
|  |  |  |  |  |
| Dwellings by period of construction- <br> Before 1920. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ...... No. | .. |  | 1,391,719 | 30.8 |
| 1820-1945......................................... | $\cdots$ | . | 1,148,389 | 25.2 |
| Since 1945 | . | .. | 2,014,385 | 44.2 |
| Dwellinga in need of major repair...................... No. | 457,570 | 13.4 | 255,414 | 5.6 |
| Av. roome per dwelling. ............................ No. | 5.3 | $\cdots$ | 5.3 2.7 | $\cdots$ |
| Av. bedrooms per dwelling....................................... | 641,820 | 18.8 | 2.7 750.942 | 16.5 |
| Mediar value......................................... $\delta$ | . ${ }^{\text {a }}$ | .. | 11,021 | ... |
|  | 394,910 | 29.3 | 979,968 | 45.5 |
| Median monthly eask renti........................... \% | 34 | ... | 62 | ... |
| 'Dwelings heated principally by- |  |  |  |  |
| Coal or wood..................................... No. |  | 70.0 | 1,062,751 | 23.3 |
| Oil............................................... ${ }_{\text {G }}^{\text {/ }}$ | 774,535 | 22.7 | 2,585,416 | 56.3 |
| Gas | 163,165 | 4.8 | 857,953 | 18.8 |
| Dwellings with- |  |  |  |  |
| Steam or hot water furnace.......................... No. | 529,465 | 15.5 | 829,984 | 18.2 |
| Hot air furnace....................................... | 1,052,570 | 30.9 | 2,242, 237 | 49.2 |
| Hot and cold running water | 1,939,770 | 56.9 | 3,650,115 | 80.1 |
| Bath or shower . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . ${ }^{\text {F }}$ | 2, 072,975 | 60.8 | 3,659,520 | 80.3 |
| Flosh toilet. | 2,328,855 | 68.3 | 3,880,512 | 85.2 |
|  | 1,594,980 | 46.8 | 4,145,086 | 91.0 |
| Passenger automobile................................ * | 1,442,595 | 42.3 | 3,114,677 | 68.4 |

[^223]Among the provinces, Alberta had the largest proportionate gain over 1951, recording an increase of 39.5 p.c. and 99,059 dwellings; Ontario was first numerically with 459,625 more dwellings in 1961 than in 1951, an increase of 38.9 p.c. Saskatchewan had the largest proportion of the single detached type in 1961, 85.7 p.c. of its occupied dwellings being in that category. On the other hand, 49 p.c. of Quebec's dwellings were apartments or flats, the highest among the provinces. The largest homes were in Prince Edward Island where they had an average of 6.4 rooms and 3.3 bedrooms. The smallest were in British Columbia and the Prairie Provinces where they averaged 4.9 rooms and 2.4 bedrooms ( 2.5 bedrooms in Saskatchewan). Crowded homes (those in which the number of persons exceeded the number of rooms) were most in evidence in Newfoundland where about three out of ten were thus classified. The proportion of such homes was lowest in Ontario at 11.8 p.c.

Among the metropolitan areas, Vancouver, Victoria and Windsor had the largest proportion of single detached type dwellings in 1961, with 75.0 p.c. of their homes in that category; 69.8 p.c. of Montreal's dwellings were apartments or flats, the highest proportion for this group. Largest homes, on the average, were found in St. John's, Nid., where they averaged 5.7 rooms and 3.0 bedrooms, and the smallest were in Sudbury, Ont., where they had an average of 4.6 rooms and 2.3 bedrooms.

Tables showing housing characteristics and tenure of occupied dwellings, by province and metropolitan area, are given in the 1965 Year Book at pp. 710-711.


Age-old occupations are undergoing radical change and new occupations are emerging.

The use of heavy machinery and of pre-prepared and prefabricated materials has changed the job of the construction worker and has reduced the size of crew required on any type of construction project, whether building or engineering.

The computer is becoming commonplace in both management and production areas. Keeping a large one busy requires the skills of a variety of specialists-economists, mathematicians, engineers, operations researchers, computer analysts, financial planners and statis-ticians-as well as of highly trained operators.


# CHAPTER XVIII.-LABOUR* 

## CONSPECTUS

Page Page
Subsection 3. Estimates of Employment... ..... 760
Subsection 4. Estimates of Labour Income. ..... 761
Section 4. Wage Rates, Hours of Labodr and Other Woriting Conditions. ..... 762
Section 5. Unemplotment Insurance.. ..... 767
Section 6. Emplotment Injuries and Wore- men's Compensation. ..... 772
Section 7. Organized Labour in Canada... ..... 773
Spectal Article: History of the Labour Movement in Canada. ..... 773
Section 8. Strixes and Loceouts. ..... 783

The interpretation of the symbols used in the tables throughout the Year Book will be found on $p$, viri of this volume.

## Section 1.-The Government in Relation to Labour

## Subsection 1.-The Federal Department of Labour and the Federal Department of Manpower and Immigration

## The Department of Labour

The federal Department of Labour was established in 1900 under the Conciliation Act which provided machinery to aid in preventing and settling labour disputes and required the Department to collect, compile and publish statistical and other relevant information. The Department also assumed the administration of the Fair Wages Policy adopted in the same year for the protection of workmen employed in the execution of Federal Government contracts and on works aided by grants from public funds. Since that time the Department has been charged with the administration of new legislation and has taken on new functions. Its work fell broadly into two main areas-industrial relations and manpower supply-until Jan. 1, 1966, when all manpower activities were transferred to a new Department of Manpower and Immigration (see p. 732).

The legislation now administered by the Department of Labour in the industrial relations area applies to employers, workers and trade unions under federal jurisdiction. The Department is responsible for conciliation procedures in industrial disputes, the investigation of complaints of unfair labour practices, refusals to bargain and violations of legislation, the processing of applications for the certification and decertification of trade unions and the conducting of representation votes. It determines wage rates and hours of work in Federal Goverament contracts for construction or supplies, and promotes joint labourmanagement consultation. It also administers legislation to prevent discrimination in employment based on race, religion, colour or national origin and to provide for equal pay for female employees. In 1965, the Canada Labour (Standards) Code became law. The Code establishes minimum standards of wages, hours of work, vacations with pay and paid general holidays in industries under federal jurisdiction.

[^224]For the past 20 years, the establishment of labour-management committees in industry has been encouraged and assisted by the Department of Labour through its LabourManagement Co-operation Service-recently reorganized as the Labour-Management Consultation Branch. There are now 2,100 active committees whose efforts are directed to such subjects as improving work methods, safety, operating efficiency, plant maintenance, elimination of waste in labour and materials, maintenance of good morale, promoting educational and training activities and joint consultation on operational changes brought about by technological change.

Research, involving regular and special surveys and analyses of economic and social trends affecting the labour force, is an important part of the Department's work carried out by the Economics and Research Branch. It studies wages and working conditions, union organization, collective bargaining, industrial relations, labour standards and safety. Through the Women's Bureau, it investigates the problems of women in the labour force. It operates a plan of workmen's compensation for seamen on Canadian ships and arranges workmen's compensation for Federal Government employees. In addition to the publication of statistical reports and the results of research studies, the Department publishes the monthly Labour Gazette, maintains records of labour legislation in the provinces and in other countries and operates a labour lending library. It provides liaison between the International Labour Organization and the federal and provincial goveroments and is responsible for the sale and administration of Canadian Government annuities.

## The Department of Manpower and Immigration*

This new Department was constituted in June 1966 by the Government Organization Act (SC 1966, c. 25) which was proclaimed effective on Oct. 1, 1966, under the Minister of Manpower and Immigration. It is composed of two operational Divisions-the Canada Immigration Division, the functions of which (transferred from the former Department of Citizenship and Immigration) are outlined in the Immigration and Citizenship Chapter at pp. 216-217, and the Canada Manpower Division, to which were transferred from the Department of Labour the National Employment Service, the Technical and Vocational Training Branch, the Civilian Rehabilitation Branch, the Manpower Consultative Service and parts of the Economics and Research Branch. These operational Divisions are supported by a Program Development Service, and information, financial and administrative, and personnel services. Although the Government organization legislation was not passed until mid-year, the actual transfer took place on Jan. 1, 1966 when reorganization and expansion of the Division functions were begun. Five regional directorates were established to report directly to the Director-General of the Division and staff services were organized into six Branches under an Assistant Director-General.

Canada Manpower Division.-Manpower Training Branch.-This Branch continues the training activities formerly conducted by the Department of Labour, including the administration of the federal-provincial Technical and Vocational Training Agreement and the federal-provincial Apprenticeship Training Agreement; these are outlined in the Education Chapter at pp. 346-349. A Training Analysis and Materials Section has been established to prepare occupational and industrial analyses, develop curricula material for the training program supported by the Vocational and Technical Training Act, promote research projects relating to manpower requirements and training in the field, and develop teaching aids.

In the administration of the training program, the Minister has the advice of the National Technical and Vocational Training Advisory Council, the National Advisory Committee on Technological Education and the Industrial Training Committee.

Vocational Rehabilitation Branch.-This Branch administers the Disabled Persons Act, 1961, under which the Federal Government shares equally with the participating provinces the costs of vocational rehabilitation services to handicapped persons. Advice

[^225]in this area is given by the National Advisory Council on the Rehabilitation of Disabled Persons, composed of representatives of the medical profession, voluntary agencies, management, organized labour, universities and federal and provincial governments. In cooperation with a sub-committee of the Council, preliminary plans have been made for the development of minimum standards for vocational rehabilitation workshops. Stafftraining in this field is conducted by the Branch and federal assistance is given to several provinces for the training of rehabilitation staff. Research projects in rehabilitation are financed by federal funds when conducted by a federal agency and university research projects may be assisted through the University Research Grants Program or on a costsharing basis under the Federal-Provincial Vocational Rehabilitation Program. Liaison is maintained with developments in other countries in this field.

The improvement of employment opportunities for mature workers is the function of the Section on Older Workers.

Employment Stabilization Branch.-Under the Municipal Winter Works Incentive Program, which is administered by this Branch, the Federal Government provides an incentive to municipalities to undertake public works during the winter by paying a percentage of the direct payroll costs incurred on approved projects. All of the provinces, the Northwest Territories and a number of Indian bands participated in the program during the period Nov. I, 1965 to Apr. 30, 1966. In general, the Federal Government paid 50 p.c. of the direct payroll costs of the approved projects but municipalities in certain areas of high winter unemployment received 60 p.c. During the $1965-66$ period, 6,006 project applications were accepted from 2,516 local authorities, involving direct payroll costs of $\$ 122,288,000$. Work was provided on site for an estimated 159,000 men and $8,062,000$ man-days. A Government-sponsored Winter Employment Campaign was conducted again during 1965-66, advertised through the newspapers, radio and television as well as through means of other printed matter.

The Supplementary Federal Government Winter Construction Program, introduced in 1963-64, was restricted in 1965-66 to creating more employment in areas of high winter unemployment. Under this program, federal departments bring forward projects that are ready for construction but for which funds have not been provided in current departmental estimates; funds for approved projects are made available under a miscellaneous vote. Projects amountiag to $\$ 6,893,000$ were approved during 1965-66 to provide 179,000 mandays of work; actual expenditures were $\$ 4,222,513$ and the number of man-days provided was 148,694 .

Counselling Services Branch.-This Branch carries out tasks relating to the adjustment of workers moving into a new environment and persons seeking the opportunity to establish enterprises. It includes sections dealing with Occupational Counselling, Settlement Services, Family Relocation and Special Employment Services.

Technical Services Branch.-This new Branch will perform four main functions: develop, implement and co-ordinate policies and techniques relating to occupational identification, description and classification, and job analysis and specification; develop psychological, aptitude and achievement tests for use in counselling and selection of persons for jobs; develop policies and techniques for use in the selection of workers in large-scale operations; and set up computer index systems to facilitate the matching of workers' skills and job requirements, the clearance of job orders and the transmission and reporting of data on the operations of the Manpower Division.

Operational Services Branch.-Included in the work of this Branch is the operation of the Manpower Consultative Service which continues to provide technical, consultative and financial assistance to management and labour, to assist in the development of constructive solutions to manpower problems created by technological and economic changes in industry, to stimulate and encourage advance planning by management for such changes in manpower, and to persuade labour to become involved in the assessment of the changes that may be required and the best method of providing for them. For such programs, the

Service adopts a research approach and, as an encouragement, offers to pay 50 p.c. of the costs involved in making studies. It also provides mobility assistance to employees displaced by industrial change. During 1966, work continued on ten programs of manpower assessment and four Manpower Assessment Incentive Agreements and one Mobility Agreement were approved. In all regions, preliminary planning was under way to meet the anticipated labour needs of primary industries.

In 1965-66, a total of 12,029 persons in the administrative, professional and technical categories were placed in employment, an increase of more than 13 p.c. over 1964-65. Somewhat less than half of this total were graduating students and an additional 15,788 students were placed in summer and part-time employment by centres of placement and career planning at institutions of higher education. Nineteen new centres of placement and career planning were established during the year.

Canada Manpower Centres.-The 250 local offices of the former National Employment Service were renamed Canada Manpower Centres on Oct. 1, 1966. The new name reflects more accurately the emphasis being placed on counselling, training, labour force mobility, up-grading, research, and labour market information. Rapid technological change, with attendant manpower supply problems, is the reason for broadening the responsibilities of the employment service. Its previous role was confined largely to placement operations. A more decentralized operation and improved staff and facilities will enable the Canada Manpower Centres to become the key operational agency in the Division's manpower planning and policies.

Program Development Service.-This Service was formed as a part of the new Department of Manpower and Immigration in the latter part of the year ended Mar. 31, 1966. It consists of five Branches: Research, Planning and Evaluation, Manpower Information and Analysis, Pilot Projects, and Legislation and Legal (supplied by the Department of Justice). The basic purpose of the Service is to assist the two operating Divisions of the Department in evaluating existing programs and developing new or revising existing programs so as to ensure the most effective means of supporting departmental policy both in the field and in the headquarters offices of the Department. Specifically, the Program Development Service has the responsibility for departmental functions related to research, statistical services, manpower information and labour market analysis, experimental projects, and legislation.

## Subsection 2.-Federal Labour Legislation and Provincial Labour Legislation

## Federal Labour Legislation

Fair Wages Policy.-The Fair Wages Policy applying to all Federal Government contracts was first set forth in a Resolution of the House of Commons (1900) and later incorporated in an Order in Council and amended from time to time. Wages and bours on contracts for construction are now regulated by the Fair Wages and Hours of Labour Act (RSC 1952, e. 108) and Order in Council PC 1954-2029 of Dec. 22, 1954. Hours of work on construction contracts are limited to eight a day and 44 a week, except in an emergency approved by the Minister or in special circumstances where exemption is granted by Order in Council; wages to be paid are those current for the type of work in the district or, if there are no current rates, fair and reasonable rates as determined by the Minister of Labour. An Act to amend the Fair Wages and Hours of Labour Act was passed by Parlisment and received Royal Assent on June 16, 1966. This amendment will, on a date to be proclaimed by the Governor in Council, make it a condition of Federal Government construction contracts that $\$ 1.25$ an hour will be the minimum rate to be paid for work on such contracts regardless of the prevailing standards, and will adopt 40 hours as a regular work week rather than 44. Contractors will be able to work employees up to 48 hours a week without a permit as long as the overtime rate of time-and-one-half is paid after 40 hours.

Wages and hours of work on contracts for equipment and supplies are also regulated by Order in Council PC 1954-2029. The hours of such work must be those fixed by the
custom of the trade in the district where the work is performed, or fair and reasonable hours. The wages must be current or fair and reasonable but in no event shall they be less than those established by statute or regulation of the province in which the work is being performed. This Order in Council contains a clause prohibiting discrimination against any person in matters of employment because of that person's race, national origin, colour or religion, or because he has made a complaint or given information with respect to such alleged discrimination.

Government Prevailing Rate Employees.*-Many departments and agencies of government employ non-office workers in public buildings, defence establishments, parks and foresta, experimental farms, canal operation, airports and government vessels, survey parties, special projects, etc. Rates of pay for such positions are fixed by the Treasury Board in consultation with the Department of Labour on the basis of prevailing private industry rates for comparable work in the appropriate area. Data used in the determination of these pay rates are secured from wage surveys made by Industrial Relations Officers of the Department of Labour, from wage research conducted by the Economics and Research Branch, and from collective agreements and wage rates established under the legislation of some provinces. The Labour Standards Branch provides wage data to assist certain Crown corporations in the preparation of their wage schedules, and gives assistance in the establishment of class titles, job descriptions and the application of job evaluation techniques.

Three sets of comprehensive Regulations have been established by the Treasury Board governing hours of work, overtime, vacations, statutory holidays, sick leave, pensions, etc., for (1) prevailing rate workers generally employed, (2) ships' officers and (3) ships' crews.

The Industrial Relations and Disputes Investigation Act.-This legislation came into effect by proclamation on Sept. 1, 1948, revoking the Wartime Labour Relations Regulations in effect since March 1944 and repealing the Industrial Disputes Investigation Act which had been in force from 1907 until suspended by the Wartime Regulations in 1944. The Act protects proceedings commenced and decisions, orders and certifications made under the wartime legislation in so far as these involve services authorized by the Act.

The Act applies only to industries within federal jurisdiction, viz., navigation, shipping, interprovincial railways, canals, telegraphs, steamship lines and ferries, both international and interprovincial, aerodromes and air transportation, radio broadcasting stations, and works declared by Parliament to be for the general advantage of Canada or of two or more provinces. However, the Act provides that provincial authorities if they so desire may enact similar legislation for application to employees within provincial jurisdiction and make mutually satisfactory arrangements with the Federal Government for the administration of such legislation by the federal authorities.

In general, the Act in its important features provides that employees and employers shall have the right to organize and bargain collectively and that trade unions may be certified as bargaining agents for employee groups. Trade unions and employers are required, upon notice, to bargain collectively in good faith. The Act provides for invoking collective bargaining negotiations and for the mediation of conciliation officers and conciliation boards in reaching collective agreements. Employees may change bargaining agents at times under conditions specified in the Act, which also prescribes conditions affecting the duration and renewal of collective agreements. Collective agreements are required to contain provision for the arbitration of disputes concerning the meaning or violation of such agreements and where such provision is lacking application may be made for its establishment. The Act prohibits unfair labour practices, i.e., the interference with or domination of trade unions by employers or interference, discrimination and coercion in trade union activity. The conditions that must be observed prior to strike and lockout action are set down

[^226]in the Act. Industrial inquiry commissions may be appointed to investigate industrial matters or disputes. The Minister of Labour is charged with the administration of the Act and is directly responsible for the provisions aftecting the appointment of conciliation officers, conciliation boards, industrial inquiry commissions, consent to prosecute, and complaints that the Act has been violated or that a party has failed to bargain in good faith.

The Canada Labour Relations Board administers provisions concerning the certification of bargaining agents, the writing of a procedure into a collective agreement for the final settlement of disputes concerning the meaning or violation of such agreement, and the investigation of complaints made to the Minister that a party has failed to bargain collectively.

Detailed statistics concerning activities under the Act may be found in the Annual Report of the Department of Labour. In brief, from Sept. 1, 1948 to Dec. 31, 1965, the Canada Labour Relations Board received 1,766 applications for certification, 1,012 of which were granted, 363 rejected, 359 withdrawn and 32 were pending at the end of the period. Of the 1,165 industrial disputes dealt with under the conciliation provisions of the Act, 1,017 were settled by conciliation officers and conciliation boards, 77 were not settled, 33 lapsed and 38 were pending at Dec. 31, 1965.

Reinstatement in Civil Employment Act. -This Act provides for the reinstatement in their civil employment of discharged members of the Armed Forces and other designated persons. It was originally passed in 1942, revised in 1946, and broadened in its application in 1954.

Canada Fair Employment Practices Act.-This Act, which came into effect on July 1, 1953, prohibits discrimination in employment based on race, colour, religion or national origin. It applies only to industries within federal jurisdiction-those covered by the Industrial Relations and Disputes Investigation Act (see p. 735). This law prohibits acts of discrimination by employers; discrimination by trade unions in regard to membership or employment; the use by employers of employment agencies that practise discrimination; and the use of advertisements or inquiries in connection with employment that express, directly or indirectly, any limitation, specification or preference as to race, colour, religion or national origin.

Female Employees Equal Pay Act.-This Act came into effect on Oct. 1, 1956 and applies to employers and employees engaged in works, undertakings or businesses coming within federal jurisdiction. The Act, in its principal provision, prohibits an employer from employing a female for any work at a rate of pay that is less than the rate at which a male is employed by that employer for identical or substantially identical work.

Canada Labour (Standards) Code.-This Act received Royal Assent on Mar. 18, 1965 when the administration and general provisions of Part V came into effect. The Act provides, in Parts I to IV which came into force on July 1, 1965, minimum standards with respect to hours of work, minimum wages, annual vacations and general holidays in industries under federal jurisdiction; the Annual Vacations Act 1958 was repealed.

The standard hours of work are eight a day and 40 a week, with maximum hours of 48 a week. Overtime pay at not less than time-and-one-half is required for all hours worked in excess of the standard hours. Permits are required in order to work more than 48 hours a week. Where the nature of the work necessitates irregular distribution of hours of work, the hours may be averaged over a period of two weeks or more.

The minimum wage is $\$ 1.25$ an hour for all persons 17 years of age or over and the minimum wage for persons under 17 years of age is $\$ 1.00$ an hour. Special rates may be set for persons receiving training on-the-job and for any person who has a disability which is a handicap in the performance of work to be done.

Employees are entitled to a two-week vacation with pay after one year of employment, with vacation pay calculated at 4 p.c. of wages. The general holidays are eight in number and every employee is entitled to a holiday with pay on each of them, or substitutes for them.

The Code has special and transitional provisions. Any person may make a submission (under Sect. 51) for deferment or suspension of Part I (Hours of Work). The Minister may grant deferment or suspension where it can be shown that the application of Part I is or would be prejudicial to the interests of the employees or detrimental to the operation of the business. The Minister's order to defer or suspend may be for a period up to but not exceeding 18 months from the date of the order, and the order may or may not contain conditions on hours.

A further deferment or suspension may be made by the Governor in Council, but only after there has been an inquiry, and the order of the Governor in Council must contain conditions on hours of work. Where a business is organized and operated in a local area, the Act provides for the making of a submission (under Sect. 52) for deferment of Sect. 11 (Minimum Wages) but the submission must have been made before July 1, 1965. The Minister may grant the deferment where it can be shown that the application of the minimum wages would be prejudicial to the interests of the employees or detrimental to the operation of the business. The deferment order may not extend beyond Jan. 1, 1967 and shall specify the minimum rate of wages that shall be paid during the period of deferment.

All submissions under Sects. 51 and 52 pending on July 1, 1965 may be listed in the Canada Gazette, and tbis action stays the operation of Part I (Hours of Work) and Sect. Il (Minimum Wages) until the Minister has rejected the submission or has made an order under Sect. 51 or 52 .

Regulations have been enacted to carry out the purposes of the Code. Among other things they provide, where there is irregular distribution of hours of work, that the standard hours and maximum hours of work may be averaged over a period of 13 weeks or fewer without Ministerial approval, and over a longer period with Ministerial approval.

## Provincial Labour Legislation

Because of the authority given by the British North America Act to the provincial legislatures to make laws in relation to local works and undertakings and in relation to property and civil rights in the province, power to enact labour legislation is largely the prerogative of the provinces. Since it imposes conditions on the rights of the employer and employee to enter into a contract of employment, labour legislation is, generally speaking, law in relation to civil rights. Under this authority, the provincial legislatures have enacted a large body of Iegislation affecting the employment relationship in such fields as working hours, minimum wages, the physical conditions of workplaces, apprenticeship and training, wage payment and wage collection, labour-management relations, workmen's compensation and other matters. In each province a Department of Labour is charged with the administration of labour laws. Legislation for the protection of miners is administered by departments dealing with mines. The workmen's compensation law in each province is administered by a Workmen's Compensation Board appointed by the Lieutenant-Governor in Council.

Minimum Wages.-As a means of ensuring adequate living standards for workers, all provinces have enacted minimum wage legislation. These laws vest in a minimum-wage-fixing board authority to set or recommend minimum wages for employees. In most provinces minimum wage orders now cover almost all employment except farm labour and domestic service. In Prince Edward Island, however, the only classes of female workers for which minimum rates have been set are restaurant and laundry workers.

Minimum rates set by the orders apply throughout the provinces except in Nova Scotia, Quebec and Saskatchewan. Nova Scotia is divided into three zones for minimum wage-setting purposes; in Quebec there are two zones. In Saskatchewan minimum rates vary between urban and rural areas. Except in Newfoundland, Nova Scotia and Prince Edward Island, the same rates are set for both sexes. The New Brunswick orders are made
on an industry basis but together provide general coverage for most employees in the province. The British Columbia board issues a separate order for each industry or occupation. In the other provinces, minimum wage boards issue general orders, supplemented by special orders in some cases.

Hours of Work.-Five provinces have general hours-of-work laws. Those of Ontario, Alberta and British Columbia set limits on hours of work. Hours are limited in Alberta and British Columbia to eight a day and 44 a week, and in Ontario to eight a day and 48 a week. The Manitoba and Saskatchewan Acts regulate hours through the requirement that one and one half times the regular rate must be paid if work is continued after specified limits. The Manitoba law requires payment of the overtime rate after eight and 48 hours for men and eight and 44 hours for wornen. The Saskatchewan Act requires payment of the overtime rate after eight and 44 hours. Some exceptions are provided for in all five Acts. Hours of work are regulated for particular classes of workers or for some industries in all provinces under other legislation.

Regulation of Wages and Hours in Certain Industries.-Industrial standards legislation is in effect in Newfoundland, Nova Scotia, New Brunswick, Ontario, Saskatchewan and Alberta. These laws provide that a schedule of wage rates and hours of work agreed upon by a representative group of employees and employers in an industry or trade may, upon approval by the government, be given statutory effect by Order in Council, and so become the minimum terms of employment for the entire industry or trade in the area. An advisory committee, usually equally representative of employers and employees, is established to assist in enforcing a schedule. This legislation is used fairly extensively in the building trades, the clothing industries, barbering and a few other industries. In Newfoundland, Nova Scotia and New Brunswick schedules have been issued only for certain construction trades in some areas. In Ontario, schedules for the garment trades, the fur industry and the hard furniture industry apply throughout the province and a substantial number of schedules apply to various construction trades and to barbering in specified areas.

Under the Quebec Collective Agreement Act, certain terms of a collective agreement, including those dealing with hours and wages, may be made binding on all employers and employees in the industry concerned in a defined area, provided the parties to the agreement represent a sufficient proportion of the industry. The standards made binding under this procedure are contained in a decree, which has the force of law. Approximately 100 decrees applying to construction, manufacturing, barbering and hairdressing, commercial establishments, and other industries and services are in effect, covering close to 250,000 employees. Of these decrees, 15 apply throughout the province.

The Construction Industry Wages Act in Manitoba provides for the setting of minimum rates of wages and maximum hours of work at regular rates for employees in the construction industry, on the recommendations of a board equally representative of employers and employees, with a public member as chairman. Under this Act, annual schedules set the regular work week and hourly rates of wages for various classifications of workers in the heavy construction industry, the Greater Winnipeg building construction industry, and in rural building construction.

Annual Vacations and Public Holidays.-All provinces except Newfoundland and Prince Edward Island have annual vacations legislation applicable to most industries. In Nova Scotia, New Brunswick and Quebec, workers are entitled to a vacation with pay of one week after a year of service; in Ontario, workers are entitled to a vacation of one week after each of the first three years of employment, and of two weeks after the fourth and each subsequent year. In the four western provinces, the annual paid vacation required by law is two weeks and, in Saskatchewan, three weeks after five years service.

The Provinces of Alberta, British Columbia, Manitoba, Nova Scotia and Saskatchewan have enacted legislation of general application dealing with public holidays. The number of holidays named varies from five to eight, and the provisions for payment also vary.

Anti-discrimination Laws.--Eight provinces have adopted fair employment practices laws forbidding discrimination in hiring and conditions of employment and in trade union membership on grounds of race, colour, religion or national origin. In addition, in British Columbia and Ontario, discrimination in employment and trade union membership on grounds of age is prohibited. Eight provinces have equal pay laws that forbid discrimination in rates of pay solely on the basis of sex, and the Quebec statute respecting discrimination in employment forbids discrimination in employment on the basis of sex.

Accident Prevention and Workmen's Compensation.-Factory or industrial safety Acts in most provinces establish safeguards for the protection of the bealth and safety of workers in factories and other workplaces with respect to such matters as sanitation, heating, lighting, ventilation and the guarding of dangerous machinery. Longestablished laws regulating the design, construction, installation and operation of mechanical equipment, such as boilers and pressure vessels, elevators and lifts and electrical installations, have been revised in recent years in line with technological changes, and legal standards have been set in new fields involving hazards to workers and the public, such as the use of gas- and oil-burning equipment. This legislation also prescribes standards of qualification for workers who install, operate or service such equipment. Laws requiring safety standards to be observed in construction and excavation work are in force in most provinces.

Workmen's compensation legislation providing a system of collective liability on the part of employers for accidents occurring to employees in the course of their employment are in force in all provinces. Workmen's compensation laws are described in greater detail on pp. 772-773.

Labour Relations.-In all provinces, there is legislation similar in principle to the federal Industrial Relations and Disputes Investigation Act, designed to establish equitable relations between employers and employees and to facilitate the settlement of industrial disputes. These laws guarantee freedom of association and the right to organize, establish machinery (labour relations boards) for the certification of a trade union as the exclusive bargaining agent of an appropriate unit of employees, and require an employer to bargain with the certified trade union representing his employees. Except in Saskatchewan, they require the parties to comply with the conciliation procedures laid down in the Act before a strike or lockout may legally take place, and they provide also that every collective agreement must contain provision for the settlement of disputes arising out of the agreement, and prohibit strikes and lockouts while an agreement is in effect. All prohibit defned unfair labour practices and prescribe penalties.

In most provinces, certain classes of employees who are engaged in essential services, such as policemen and firemen, are forbidden to strike and, in lieu of the right to strike, have recourse to final and binding arbitration. There are special provisions requiring arbitration of hospital disputes in five provinces.

Certification of Qualified Tradesmen.-All provinces have apprenticeship laws providing for an organized procedure of on-the-job training and school instruction in designated skilled trades, and statutory provision is made in most provinces for the issue of certificates of qualification, on application, to qualified tradesmen in certain trades. In some provinces, legislation is in effect making it mandatory for certain classes of tradesmen to hold a certificate of competency.

Changes in 1965-66. Significant developments in provincial labour legislation in the years 1965 and 1966 are described below.

Minimum Wages.-General minimum wage rates were increased in seven provinces. Manitoba and Alberta also removed the differentials in the minimum rates between rural and urban areas. In Nova Scotia, minimum rates were fixed for male workers for the first time. The minimum rates now in effect for experienced workers in certain cities are shown in Table 1.
1.-Minimum Wage Rates for Experienced Workers in Certain Clities, by Sex, Dec. 1, 1968

| Item, Type of Eetablishment and Sex | $\begin{aligned} & \text { St. } \\ & \text { John's, } \\ & \text { Nfld. } \end{aligned}$ | Char-lottetown, P.E.I. | $\begin{gathered} \text { Halifar, } \\ \text { N.S. } \end{gathered}$ | $\begin{aligned} & \text { Saint } \\ & \text { John, } \\ & \text { N.B. } \end{aligned}$ | Montreal, Que. | Toronto, Ont. | Winnipeg. Man | Regina, Sask. | $\begin{aligned} & \text { Ed- } \\ & \text { monton, } \\ & \text { Alta. } \end{aligned}$ | $\begin{aligned} & \text { Van- } \\ & \text { couver, } \\ & \text { B.C. } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Marimum bours per week to whicb therates apply. | $\begin{aligned} & 481 \\ & \mathbf{4 8 1} \end{aligned}$ | 48 | 48 48 | 48 48 | 482 482 | 48 48 | 48 44 | 44 44 | 44 44 | 403 <br> 403 <br> 1 |
|  | $\$$ per hour | - per bour | $\begin{aligned} & \text { oper } \\ & \text { hour } \end{aligned}$ | $\begin{aligned} & \text { \$per } \\ & \text { hour } \end{aligned}$ | $\$$ per bour | $\begin{aligned} & \text { \$ per } \\ & \text { hour } \end{aligned}$ | \$per hour | \$per week | $\begin{aligned} & \text { 名per } \\ & \text { hour } \end{aligned}$ | $\begin{aligned} & \text { \$ per } \\ & \text { hour } \end{aligned}$ |
| Factories.............. ${ }_{\text {M. }}^{\text {M. }}$ | 0.70 0.50 | 1.104 | 1.10 0.85 | 0.90 0.90 | 1.00 1.00 | 1.00 | 1.00 1.00 | 40.00 40.00 | 1.00 1.00 | 1.00 |
| Laundries................. ${ }_{\text {F }}^{\text {F. }}$ | 0.70 0.50 | 1.10 0.55 | 1.10 0.85 | 0.80 0.80 | 1.00 1.00 | 1.00 1.00 | 1.00 1.00 | 40.00 40.00 | 1.00 | 1.00 1.00 |
| Shope. . . . . . . . . . . . ${ }_{\text {M }}^{\text {M }}$. | 0.70 0.50 | 1.10 | 1.10 0.85 | 0.90 0.90 | 1.00 1.00 | 1.00 1.00 | 1.00 1.00 | 40.00 40.00 | 1.00 1.00 | 1.00 1.00 |
| Hotels and reataurants $\frac{\mathrm{M}}{\mathrm{F}}$. | 0.70 0.50 | 1.10 21.005 | 1.10 0.85 | 0.80 0.80 | ${ }^{0.645}$ | 1.00 1.00 | 1.00 1.00 | 40.00 40.00 | 1.00 1.00 | 1.00 1.00 |
| Besuty parlours....... $\frac{\mathrm{M}}{\mathrm{F}}$. | 0.70 0.50 | 1.10 | 0.85 0.85 | 0.80 0.80 | 1.00 1.00 | 1.00 1.00 | 1.00 1.00 | 40.00 40.00 | 1.00 | $\begin{aligned} & 35.00^{7} \\ & 35.00^{\top} \end{aligned}$ |
| $\begin{aligned} & \text { Theatres and amuse- } \\ & \text { ment places. }\end{aligned}$ M . | $\begin{aligned} & 0.70 \\ & 0.50 \end{aligned}$ | 1.10 | 1.10 0.85 | 0.80 0.80 | 1.00 1.00 | 1.00 1.00 | 1.00 1.00 | 40.00 40.00 | 1.00 1.00 | 0.75 0.75 |
| Offices................ ${ }_{\text {M }}^{\text {F }}$. | $\begin{aligned} & 0.70 \\ & 0.50 \end{aligned}$ | 1.10 | 1.10 0.85 | 0.80 0.80 | 1.00 1.00 | 1.00 1.00 | 1.00 1.00 | 40.00 40.00 | 1.00 1.00 | 1.00 1.00 |

[^227]Hours of Work.-In Alberta, the 44 -hour week in effect in centres with a population of more than 5,000 was extended to all parta of the province, effective from Jan. 1, 1966. In Manitoba, the statutory overtime requirement (one and one half times the employee's regular rate for all time worked in excess of eight hours in the day and 44 hours in the week for women, and eight hours in the day and 48 hours in the week for men) was extended to all industries subject to the Act in all parts of the province. Prior to the amendment, the statutory overtime standard applied only to employment listed in a schedule and to the industrialized areas of the province.

Annual Vacations and Public Holidays.-The annual vacations legislation in Ontario was amended to increase to two weeks the length of the vacation for an employee with more than three years service. In Manitoba, provision was made for payment of vacation pay on termination of employment during a working year. Orders were issued under the Alberta Labour Act requiring employers to give their employees five paid public holidays a year, and providing for the payment of a lump sum to construction workers in lieu of public holidays. In Saskatchewan, also, orders were issued adopting a percentage payment in lieu of pay for eight public holidays for workers in the construction and logging and lumbering industries. In British Columbia, legislation was passed to authorize the Board of Industrial Relations to require employers to give their employees eight public holidays with pay.

Maternity Prolection.-British Columbia passed a new Maternity Protection Act applying to all types of employment except farming, horticultural operations and domestic service. The Act provides for six weeks of leave of absence during pregnancy and six weeks after childbirth, or longer with a medical certificate, and protects a woman from dismissal while absent on maternity leave up to a period of 16 weeks.

Anti-discrimination Measures.-Two provincea enacted anti-discrimination laws. Alberta adopted a Human Rights Act prohibiting discrimination in employment, in trade union membership, and in public accommodation on grounds of race, religious beliefs, colour, ancestry or place of origin. Ontario passed the Age Discrimination Act, 1966,
making Ontario the second province, after British Columbia, to ban discrimination in employment on grounds of age. The Alberta Act binds the Crown and its agencies. An amendment in Ontario in 1965 also brought the provincial government and its agencies under the Human Rights Code.

Industrial Safety.-The major change was the complete revision and up-dating of the industrial safety legislation of three provinces-Manitoba, Nova Scotia and British Columbia. All three laws were broadened in scope. The Manitoba and Nova Scotia Acts contain general principles and authorize the setting of detailed safety standards by regulation. The new legislation in British Columbia sets general standards for the working environment in such matters as hygiene and the welfare and comfort of employees. The general Accident Prevention Regulations under the British Columbia Workmen's Compensation Act, which constitute the province's safety code, were also revised. In New Brunswick and Ontario, the first detailed regulations under general industrial safety Acts passed in 1964 came into effect in 1965. The Ontario Loggers' Safety Act was proclaimed in force and regulations were issued under it.

Steps were taken through a revision of regulations in some provinces to strengthen safety standards governing construction, grain elevators and passenger and freight elevators.

Workmen's Compensation.-Benefits under workmen's compensation laws were increased in most provinces. Five provinces increased the maximum yearly earninge on which compensation may be paid. The principle of adjusting pensions to the cogt of living in line with increases in the Consumer Price Index was introduced in the British Columbia legislation. Compulsory coverage of farm workers was introduced in Ontario.

Labour Relations.-Developments in labour relations legislation related in the main to groups which were brought under collective bargaining legislation for the first time or which had only recently become organized for bargaining purposea. The Ontario Hospital Labour Disputes Arbitration Act was enacted to prohibit strikes and lockouts in disputes involving hospital employees and to provide for the settlement of such disputes by arbitration. In the general field of public service, a new Civil Service Act was enacted in Quebec, which gave public servants employed by the province the right to bargain collectively with the government regarding salary and other conditions of employment and the right to strike, provided esential services were maintained. These changes and somewhat similar changes in the law in Manitoba and Alberta have led to collective agreements between the government of those provinces and their employees. Special provisions for teachers were added to the Quebec Labour Code, placing delays upon strike action but not prohibiting it. Amendments in Nova Scotia brought employees of provincial boards and commissions under the Trade Union Act.

A number of changes were also made in the general labour relations law of neveral provinces. In Ontario and Manitoba, amendments to dispute settlement provisions were designed to encourage the use of a mediator selected by the parties to a dispute as an alternative to the use of conciliation boards. The jurisdiction of the Ontario Labour Relations Board was extended to cover disputes over work assignments and the Manitoba Labour Board was given authority to deal with unfair labour practice complaints.

Apprenticeship.-Nova Scotia replaced its Apprenticeship and Tradesmen's Qualification Act and six provinces designated new trades for the purpose of apprenticeship training.

## Section 2.-The Labour Force*

Since 1946, reliable information for analysis of employment in Canada, at the national level and for the five major regions, has been provided through a labour force survey. Between November 1945 and November 1952, quarterly surveys were undertaken and, thereafter, the survey has been carried out on a monthly basis. The sample used in the survey has been designed to represent all persons in the population, 14 years of age or over, residing in Canada, with the exception of residents of the Yukon and Northwest Territories, Indians

[^228]living on reserves, inmates of institutions and members of the Armed Forces. Interviews are carried out in approximately 35,000 households chosen by area sampling methods across the country.*

In the labour force survey persons are classified on the basis of their activity during the week prior to the survey interview week. This week is called the reference week. The main divisions in the classification are:-

Labour Force.-The civilian labour force is composed of that portion of the civilian noninstitutional population, 14 years of age or over who, during the reference week, were employed or unemployed.

Employed.-The employed include all persons who, during the reference week: (a) did any work for pay or profit: (b) did any work which contributed to the running of a farm or business operated by a related member of the household; (c) had a job, but were not at work, because of bad weather, illness, industrial dispute or vacation, or because they were taking time off for other reasons. Persons who had jobs but did not work during the reference week and who also looked for work are included in the unemployed as persons without work and seeking work.

Unemployed.-The unemployed includes all persons, who, through the reference week: (a) were without work and seeking work, i.e., did no work during the reference week and were looking for work; or would have been looking for work except that they were temporarily ill, were on indefinite or prolonged layoff, or believed no suitable work was available in the community; (b) were temporarily laid off for the full week, i.e., were waiting to be called back to a job from which they had been laid off for less than 30 days.

Not in the Labour Force.--Those not in the labour force include all civilians 14 years of age or over (esclusive of institutional population) who are not classified as employed or unemployed. This category includes those: going to school; keeping house; too old or otherwise unable to work; and voluntarily idle or retired. Housewives, students amd others who worked part-time are classified as employed, or if they looked for work as unemployed.

The estimates derived from the labour force survey, which are based on a sample of households, are subject to sampling error. Somewhat different figures might be obtained if a complete census were taken. This difference is called the sampling error of the estimates. In the design and processing of the labour force survey extensive efforts are made to minimize the sampling error; in general, the percentage of error tends to decrease as the size of the estimate increases. A statistical measure of the sampling error can be found in DBS monthly publication The Labour Force (Catalogue No. 71-001).

[^229]
## 2.-Estimates of the Civilian Labour Force and its Main Components, Annual Averages, 1946 and 1958-65

Nort.-Comparable figures for 1947-55 are given in the 1962 Year Book, p. 708. Figures do not include inmates of institutions and Indians on reservations.

| Year | Civilian Population (14 years of age or over) | Civilian Labour Force (14 years of age or over) |  |  |  |  |  |  | Pergons not in the Labour Foree (14 years of sge or over) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Employed |  |  |  |  | Uneraployed | Total <br> Labour <br> Force |  |
|  |  | Non-agriculture |  |  | Agriculture | $\begin{gathered} \text { Total } \\ \text { (em- } \\ \text { ployed) } \end{gathered}$ |  |  |  |
|  |  | Paid Workers | Other | $\begin{gathered} \text { Total } \\ \text { (non-agri- } \\ \text { culture) } \end{gathered}$ |  |  |  |  |  |
|  | '000 | '000 | '000 | '000 | '000 | '000 | '000 | '000 | ${ }^{\circ} 000$ |
| 19461. | 8,779 | 2,900 | 490 | 3,480 | 1.186 | 4,666 | 163 | 4,829 | 3,950 |
| 1356. | 10,807 | 4,286 | 522 | 4,808 | 777 | 5,585 | 197 | 5,782 | 5.025 $\mathbf{5}, 115$ |
| 1957. | 11,123 11.388 | 4,442 4,461 | 540 527 | 4,983 4,988 | 748 718 | 5,706 | 278 432 | 6,008 6.137 | 5,115 |
| 1959 | 11,605 | 4, 424 | 546 | 5,170 | 700 | 5,870 | 872 | 6. 242 | 5,363 |
| 1960 | 11, 831 | 4,732 | 551 | 5,282 | 683 | 5,965 | 448 | 6,411 | 5,420 |
| 1981. | 12,053 | 4,799 | 575 | 5,374 | 681 | 8,055 | 466 | 6,521 | 5,581 |
| 1962 | 12,280 | 4,980 | 585 | 5,585 | 660 | 6,225 | 390 | 6,615 | 5. 865 |
| 1963. | 12,536 | 5,138 | 588 | 5,726 | 649 | 6.375 | 374 | 6.748 | 5,787 |
| 1964. | 12,817 | 5,368 | 611 | 5,979 | 630 | 6,609 | 324 | 6,933 | 5,884 |
| 1965. | 13,128 | 5,855 | 813 | 6,268 | 584 | 6,862 | 280 | 7,141 | 5,986 |

[^230]Characteristics of the Civilian Labour Force, 1946-65. -The civilian non-institutional population averaged $13,128,000$ in 1985 compared with $8,779,000$ in 1946, an increase of 49.5 p.c., and during the same period the labour force increased 47.9 p.c. to $7,141,000$. As a result, the proportion of the population 14 years of age or over in the labour force declined somewhat from 55.0 p.c. to 54.4 p.e. during the period. Underlying this slight decline was a decrease in the proportion of males in the labour force and a partially offsetting increase in the proportion of females in the labour force. Such factors as changes in the age composition of the population, an increase in the number of young people deferring their entry into the labour force by remaining longer in school and a greater tendency for workers to retire from the labour force at an earlier age contributed to the decline in the male labour force participation rate from 85.1 p.c. to 77.9 p.c. between 1946 and 1965 . Although these factors also influenced females, they were more than compensated by the increase in the proportion of married women in the labour force. For example, between 1959 and 1964 the labour force participation rate of married females increased from 18.0 p.c. to 24.2 p.c. In 1965 married women constituted 51.7 p.c. of the female labour force and the proportion of the female population in the labour force increased from 23.4 p.c. in 1953 to 31.3 p.c. in 1965. The tendency for a greater proportion of married women to enter the labour force was also reflected in the labour force particjpation rates of females 25-44 and 45-64 years of age. During the $1953-65$ period, the proportion of $25-44$-year-old females in the labour force rose from 23.1 p.c. to 32.6 p.c. and for the $45-64$-year-olds the proportion increased from 17.2 p.e. to 32.9 p.c.

Greater job opportunities for women, particularly in the service industries, facilitated the increase in the female labour force participation rate. In 1946, the goods-producing industries and the service-producing industries accounted for about 60 p.e. and 40 p.c., respectively, of total employment; by 1965 these proportions had changed to 43 p.c. and 57 p.c., respectively. Some notable shifts in the distribution of employment also took place within these broad industry groupings. In 1946, almost one in four employed persons worked in agriculture but by 1965 the ratio had declined to less than one in ten. Between 1946 and 1965, a slight decline occurred in the proportion of persons employed in manufacturing industries but the proportion employed in trade, in finance, insurance and real estate, and in service industries increased substantially.

Paralleling the shifts in the distribution of employment among industries was a change in the occupational mix. A greater increase occurred in the number of white-collar occupations than in the number of blue-collar jobs in the postwar period, rellecting the changing composition of final output and also the introduction of new methods of production. Table 5 shows that increases occurred in the proportions of persons employed in the managerial, the professional and technical, the clerical and the service occupational groups in the $1948-65$ period. On the other hand, agricultural oceupations, in which approximately 22.5 p.c. of all employed persons worked in 1948 , accounted for only 8.7 p.e. of employed persons in 1965. Small declines also occurred in the proportions of employed persons working in the fishing, logging, trapping and mining occupational group, in the manufacturing and mechanical group and in the transportation group.

During the $1946-65$ period, total employment increased 47.1 p.c. to $6,862,000$; the number of men employed rose 34.2 p.e. to $4,842,000$ and the number of females 91.1 p.c. to $2,020,000$. On an annual average basis, unemployment as a percentage of the labour furce fluctuated widely during the period, ranging between 2.2 p.c. in 1947 and 7.1 p.c. in 1961; it averaged 3.9 p.c. in 1965 . Throughout this period, unemployment rates were substantially lower for women than for men.

Persons not in the labour force averaged $5,986,000$ in 1965 compared with $3,950,000$ in 1946, an increase of 51.5 p.c. Housewives and students together accounted for over 80 p.c. of the 1965 total.
3.-Percentage Distribution of the Population 14 Years of Age or Orer in the Labour Force and Non-labour Force Categories, by Sex, 1948 and 1954-65
Norz.-Comparable figures for 1947-55 are given in the 1962 Year Book, pp. 710.711.

| Year | Population (14 years of age or over) | Percentage Distribution of the Population 14 Years of Age or Over |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Labour Force |  |  |  | Not in Labour Force |  |  |  |
|  |  | Employed |  | Unemployed | Total | Women Keeping Houre | Persong Going to School | Other | Total |
|  |  | Agriculture | Non- $\begin{gathered}\text { Nati- } \\ \text { agiv } \\ \text { culture }\end{gathered}$ |  |  |  |  |  |  |
|  | Males |  |  |  |  |  |  |  |  |
| 19461.. | $\begin{aligned} & .000 \\ & 4,460 \end{aligned}$ | p.e. | p.c. | p.c. 3.1 | p.c. 8.1 | p.e. | p.c. 5.5 | p.c. | $\begin{aligned} & \text { p.c. } \\ & 14.8 \end{aligned}$ |
| 1958. | 5,398 5,559 | 13.7 12.8 | 65.4 65.1 | 3.2 4.4 | 82.2 82.3 | $\ldots$ | 6.2 6.4 | 11.6 11.4 | 17.8 17.7 |
| 1958. | 5.684 | 11.7 | 63.3 | 6.6 | 81.7 | $\ldots$ | 6.8 | 11.6 | 18.4 |
| 1959. | 5,785 | 11.3 | 64.2 | 5.6 | 81.0 | . | 7.2 | 11.7 | 19.0 |
| 1960. | 5,890 | 10.7 | 63.4 | 6.6 | 80.7 | ... | 7.5 | 11.7 | 19.3 |
| 1961. | 5,991 | 10.4 | 62.7 | 6.7 | 79.8 | $\cdots$ | 8.1 | 12.1 | 20.2 |
| 1962. | 6,094 | 9.8 | 63.8 | 5.4 | 79.1 | ... | 8.6 | 12.3 | 20.9 |
| 1963. | 6,215 | 9.3 | 64.2 | 5.0 | 78.5 | ... | 9.0 | 12.5 | 21.5 |
| 1964. | 6,351 | 8.8 | 65.1 | 4.2 | 78.1 | ... | 9.5 | 12.4 | 21.9 |
| 1965........ | 6.505 | 8.0 | 66.4 | 3.4 | 77.9 | ... | 9.9 | 12.3 | 22.1 |
|  | Females |  |  |  |  |  |  |  |  |
|  | '000 | p.o. | p.c. | p.e. | p.c. | p.e. | p.c. | p.c. | p.e. |
| 19462 $\ldots$ | 4,379 | 3.6 | 20.6 | 0.6 | 24.7 | 63.2 | 5.1 | 7.0 | 75.3 |
| 1956. | 5,409 | 0.7 | 23.7 | 0.5 | 24.9 | 64.9 | 5.5 | 4.7 | 75.1 |
| 1957. | 5,564 | 0.7 | 24.5 | 0.6 | 25.8 | 63.9 | 5.7 | 4.5 | 74.2 |
| 1958. | 5,703 | 0.9 | 24.4 | 0.9 | 262 | 63.2 | 6.1 | 4.5 | 73.8 |
| 1959. | 5,820 5,942 | 0.8 | 25.1 26.0 | 0.8 1.0 | 26.7 27.9 | 62.4 61.0 | 6.4 6.6 | 4.5 4.5 | 73.3 72.1 |
| 1960. | 5,942 | 0.8 | 26.0 | 1.0 | 27.9 | 61.0 | 6.6 | 4.5 | 72.1 |
| 1961. | 6,061 | 1.0 | 26.6 | 1.1 | 28.7 | 59.9 | 6.9 | 4.5 | 71.3 |
| 1962. | 6,186 | 1.0 | 27.1 | 1.0 | 29.0 | 59.1 | 7.4 | 4.5 | 71.0 |
| 1963. | 6,320 | 11 | 27.5 | 1.0 | 29.6 | 58.1 | 7.9 | 4.4 | 70.4 |
| 1964. | 6,466 | 1.1 | 28.5 | 0.9 | 30.5 | 58.9 | 8.8 | 4.3 | 69.5 |
| 1965. | 6,623 | 1.1 | 29.4 | 0.8 | 31.3 | 55.6 | 8.6 | 4.5 | 68.7 |

${ }^{1}$ Excludes Newfoundland.

## 4.-Percentage Distribution of the Employed by Industrial Group, 1946 and 1956-65

Note.-Comparable figures for 1947-55 are given in the 1962 Year Book, p. 711.

| Year | Total Employed | Percentage Distribution |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Agriculture | Other <br> Primary <br> Industries | Manufacturing | Conatraction | Transportation and Other Utilities | Trade | Fidance, Insurance and Real Estate | Service ${ }^{1}$ |
|  | ${ }^{\prime} 000$ | p.e. | p.e. | p.o. | D.c. | p.c. | p.c. | p.c. | p.c. |
| 19462.1. | 4,668 | 25.4 | 4.0 | 26.0 | 4.8 | 8.1 | 12.3 | 2.7 | 16.8 |
| $1950{ }^{3}$ | 5,585 | 13.9 | 4.6 | 25.7 | 7.4 | 9.0 | 15.8 | 3.5 | 20.3 |
| 19573. | \$,731 | 13.0 | 4.3 | 26.1 | 7.7 | 89 | 15.7 | 3.6 | 20.8 |
| 19583 | 5,706 | 12.5 | 3.7 | 25.6 | 7.5 | 8.9 | 16.0 | 3.7 | 22.1 |
| 19593. | 5. 870 | 11.8 | 3.4 | 25.5 | 7.5 | 8.9 | 16.2 | 3.7 | 23.0 |
| $1960{ }^{3}$ | 5,985 | 11.3 | 3.5 | 24.7 | 7.0 | 8.6 | 18.5 | 3.8 | 24.6 |
| $1961^{\text { }}$. | 6,055 | 11.1 | 3.0 | 20.0 | 6.7 | 8.4 | 16.3 | 4.0 | 25.5 |
| 19614 | 6,055 | 11.2 | 3.0 | 24.0 | 6.2 | 9.3 | 16.9 | 3.9 | 25.3 |
| 1962 . | 6,225 | 10.6 | 2.9 | 24.1 | 8.3 | 9.4 | 16.9 | 4.0 | 25.8 |
| 19634 | B,375 | 10.2 | 2.8 | 24.3 | 6.4 | 9.4 | 16.7 | 4.0 | 28.3 |
| $1964{ }^{\text {c }}$ | B, 609 | 9.5 | 3.0 | 25.0 | 6.2 | 8.9 | 16.7 | 4.0 | 26.7 |
| 19654 | 6,862 | 8.7 | 3.4 | 23.8 | 6.7 | 9.0 | 16.7 | 4.1 | 27.6 |

${ }^{1}$ Includes public administration and defence. to the 1948 etandard industrial classiacation. cation.
${ }^{2}$ Ercludes Newfoundiand. ${ }^{3}$ Classified according - Classified according to the 1060 standard industrial clasifi-
5.-Percentage Distribution of the Employed by Major Occupational Group, 1948-65

| Year | All <br> Occupations Annual Average | Man-agerial | Professional and <br> Technical | Clerical | Sales ${ }^{1}$ | Service and Recreation |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | p.c. | p.c. | p.c. | p.c. | p.c. |
| 19482,3. . | 4,875 | 6.1 | 5.9 | 10.2 | 8.4 | 7.4 |
| 19492,3. | 4,913 | 7.8 | 6.0 | 10.4 | 7.3 | 7.6 |
| 19503 . | 4,976 | 8.2 | 6.4 | 10.9 | 7.0 | 8.2 |
| $1951{ }^{\text {B }}$ | 5,097 | 8.3 | 6.4 | 11.4 | 7.3 | 7.9 |
| $1952^{3}$. | 5,159 | 8.9 | 6.5 | 11.5 | 7.4 | 8.7 |
| 19533. | 5,235 | 9.1 | 7.1 | 11.3 | 7.4 | 8.5 |
| 19543. | 5,243 | 8.7 | 7.3 | 11.6 | 7.6 | 8.9 |
| $1955{ }^{2}$ | 5,364 | 8.4 | 7.6 | 11.7 | 7.7 | 8.8 |
| $1956{ }^{3}$ | 5,585 | 8.3 | 7.6 | 12.2 | 7.6 | 9.1 |
| $1957{ }^{3}$. | 5,731 | 8.7 | 8.4 | 12.3 | 7.8 | 9.2 |
| 19583. | 5,706 | 8.8 | 8.8 | 12.6 | 7.9 | 9.7 |
| 19593. | 5,870 | 8.9 | 9.3 | 12.6 | 8.3 | 9.8 |
| $1960{ }^{3}$ | 5,965 | 8.7 | 9.7 | 12.8 | 8.3 | 10.2 |
| 19613. | 6,055 | 9.1 | 9.8 | 13.1 | 8.4 | 10.9 |
| 19614 | 6,055 | 9.1 | 9.9 | 13.3 | 7.4 | 10.9 |
| 19624 | 6,225 | 9.3 | 10.6 | 13.3 | 7.3 | 10.9 |
| 19634. | 6,375 | 9.2 | 10.6 | 13.4 | 7.2 | 11.1 |
| 19644 | 6,609 | 9.2 | 10.6 | 13.4 | 7.4 | 11.7 |
| 19654. | 6,862 | 9.3 | 11.4 | 13.4 | 7.0 | 11.6 |
|  | Transport | Communication | Farmers and Farm Workers | Fishermen, Trappers, Loggers and Miners | Craftsmen, <br> Production Process and Related Workers ${ }^{5}$ | Labourers and Unskilled Workers |
|  | p.c. | p.c. | p.c. | p.c. | p.c. | p.c. |
| $19488^{2,3}$. | 7.0 | 1.4 | 22.5 | 3.3 | 23.9 | 4.0 |
| 19492,3. | 7.0 | 1.4 | 22.0 | 2.9 | 24.5 | 3.1 |
| 19503. | 6.7 | 1.4 | 20.6 | 3.2 | 24.9 | 2.6 |
| $1951{ }^{3}$ | 6.7 | 1.4 | 18.5 | 3.5 | 23.9 | 4.7 |
| 19523. | 6.8 | 1.4 | 17.3 | 3.2 | 23.2 | 5.2 |
| $1953{ }^{3} \ldots \ldots$. | 6.8 | 1.5 | 16.5 | 2.8 | 23.6 | 5.5 |
| 19543. | 6.5 | 1.5 | 16.9 | 3.1 | 22.7 | 5.4 |
| $1955{ }^{3}$ | 6.7 | 1.5 | 15.4 | 3.3 | 22.9 | 6.0 |
| ${ }_{19573}{ }^{3}$. | 6.7 | 1.4 | 14.0 | 3.3 | 23.3 | 6.4 |
| $1957{ }^{3}$. | 6.5 | 1.5 | 13.1 | 3.0 | 23.6 | 5.9 |
| 19583. | 6.5 | 1.6 | 12.5 | 2.6 | 23.2 | 5.8 |
| 19593. | 6.4 | 1.5 | 11.9 | 2.4 | 23.1 | 5.9 |
| ${ }_{1961} 1963$ | 6.4 6.3 | 1.4 1.4 | 11.4 11.2 | 2.5 2.1 | 22.8 22.3 | 5.7 5.4 |
| 19614. | 5.8 | 0.9 | 11.3 | 2.1 | 24.2 | 5.0 |
| 19624. | 5.6 | 0.9 | 10.6 | 1.9 | 24.7 | 4.8 |
| 19634 | 5.6 | 0.9 | 10.3 | 1.9 | 24.9 | 4.8 |
| 19644 | 5.6 | 0.8 | 9.6 | 2.1 | 24.6 | 4.9 |
| 19654. | 5.4 | 0.9 | 8.7 | 2.2 | 25.2 | 4.9 |

[^231]Several changes in the regional distribution of the Canadian labour force occurred between 1946 and 1965. The proportion in the Prairie Province region declined from about 20 p.c. to 17 p.c., there were small increases in the proportions in Quebec, Ontario and British Columbia, and the Atlantic region's share remained unchanged. Employment was substantially higher in 1965 than in 1946 in all regions. In British Columbia it increased 63.8 p.c., in Ontario 54.1 p.c., in Quebec 49.0 p.c., in the Prairie Provinces 26.3 p.c., and in the Atlantic region (excluding Newfoundland) 14.3 p.c.

There was an uneven regional distribution of unemployed persons in 1965. The Atlantic region, which contained only 8.6 p.c. of the total labour force, accounted for 16.1 p.c. of the unemployed, and Quebec, which contained 28.3 p.c. of the labour force, accounted for 38.9 p.c. of the unemployed. Conversely, Ontario and the Prairie Provinces, with
36.6 p.c. and 17.2 p.c., respectively, of the labour force, accounted for only 23.6 p.c. and 11.1 p.c., respectively, of the unemployed. British Columbia had 9.3 p.c. of the labour force and 10.0 p.c. of the unemployed. This uneven distribution of unemployed persons, which also prevailed in 1946, was reflected in the regional unemployment rates. The annual average unemployment rate in 1965 was 7.4 in the Atlantic region, 5.4 in Quebee, 2.5 in Ontario, 2.5 in the Prairie Province region, and 4.2 in British Columbia.

## 6.-Estimates of Employment and Unemployment, by Region, 1946 and 1956-65

Nore-Comparable figures for 1947-55 are ziven in the 1962 Year Book, p. 712.

| Year | Atlantic |  | Quebec |  | Ontario |  | Prairies |  | British Columbia |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\underset{\text { ment }}{\text { Employ- }}$ | Unemployment | Employment | Unemployment | Employment | Uвеп. ployment | $\underset{\text { ment }}{\text { Employ- }}$ | Unemployment | Employment | Unem. ployment |
|  | '000 | '000 | '000 | '000 | '000 | ${ }^{+} 000$ | '000 | '000 | '000 | '000 |
| $1946{ }^{\circ}$. | 392 | 23 | 1,283 | 54 | 1.654 | 48 | 947 | 21 | 390 | 16 |
| $1956 .$. $1957 .$. | 489 492 | 31 45 | 1,535 1,576 | 80 101 | 2,096 2,161 | 51 | 976 992 | 22 | 489 | 14 |
| 1958. | 469 | 67 | 1,582 | 153 | 2,142 | 122 | 1.013 | 43 | 501 | 47 |
| 1959.. | 482 | 59 | 1,620 | 138 | 2,198 | 103 | 1,049 | 85 | 521 | 36 |
| 1960. | 492 | 59 | 1.639 | 164 | 2,249 | 128 | 1.069 | 47 | 516 | 48 |
| 1961.. | 507 | 64 | 1,652 | 168 | 2,269 | 132 | 1,100 | 53 | 527 | 49 |
| 1962.. | 516 | 62 | 1,713 | 139 | 2,317 | 105 | 1,129 | 46 | 551 | 39 |
| 1963. | 522 | 55 | 1,762 | 142 | 2,382 | 94 | 1,138 | 44 | 571 | 38 |
| 1964.. | 542 | 46 | 1,827 | 124 | 2.473 | 83 | 1,162 | 37 | 805 | 34 |
| 1965.. | 566 | 45 | 1,912 | 109 | 2,548 | 66 | 1,196 | 31 | 639 | 28 |

1 Excludes Newfoundland.

## Section 3.-Employment Statistics*

## Subsection 1.-Statistics of Employment, Earnings and Hours

Monthly records of employment have been collected from larger business establishments since 1921. At that time a survey was instituted to provide employment index numbers which would serve as current economic indicators. In 1941 the survey was extended to provide information on payrolls and per capita wages and salaries and in 1944 it was further extended to provide data on hours of work and hourly and weekly wages. Also during the war period, separate records for men and women employees were established. Beginning with the January 1966 publications of Employment and Average Weekly Wages and Salaries and Man-Hours and Hourly Earnings, the data compiled are on a revised basis. A historical series (Catalogue No. 72-504) provides, on the revised basis, monthly and annual data from 1961-65 and will be extended to provide data from 1957 to this period. The revision has involved the publishing of employment indexes on the time base 1961=100 in place of the time base 1949=100. All data are compiled on the 1960 standard industrial classification instead of the 1948 standard industrial classification. The new establishment concept of reporting has been introduced with the result that, in a number of cases, activities formerly reported separately are now consolidated into operating entities capable of reporting all elements of basic industrial statistics, including employment and payrolls.

Statistics below the provincial level are compiled for many urban areas using the census definition for metropolitan areas and modified definitions for other urban areas. The survey at present covers establishments with 20 or more employees in any month of the current period rather than, as formerly stated, "those usually having 15 or more employees" The data in Tables 7-14 are presented according to the revised series.

The survey now covers sectors of the following major industry divisions: forestry; mining (including milling); manufacturing; construction; transportation, communication and other utilities; trade; and finance, insurance and real estate. Also included are

[^232]certain branches of the service industry, mainly hotels and restaurants, laundries and drycleaning plants, and recreational and business services. The survey excludes agriculture, public administration and community services such as health and education. The coverage corresponds closely, therefore, to the business sector of the economy. Since the survey does not cover small firms and excludes several industries, the employment records are published in the form of index numbers ( $1961=100$ ).

The monthly employment statistics relate to the number of employees drawing pay in the last pay period in the month. Data are requested for all classes of employees with the exception of homeworkers and casual employees working less than one day in the pay period. Owners and firm members are also excluded. The respondents report the gross wages and salaries paid in the last pay period in the month, before deductions are made for income tax, unemployment insurance, etc. The reported payrolls represent gross remuneration for services rendered and paid absences in the period specified, including salaries, commissions, piece-work and time-work payments, and such items as shift premiums and regularly paid production, and incentive and cost-of-living bonuses. The statistics on hours relate to the straight and overtime hours worked by those wage-earners for whom records of hours are maintained, and also to hours credited to wage-earners absent on paid leave during the reported period. If the reported period exceeds one week, the payroll and hours data are reduced to weekly equivalents.

Employment.-Table 7 shows that, over the five-year period 1961-65, the industrial composite index of employment rose by 14.3 p.c.; service increased by 25.8 p.c., construction by 19.7 p.c., manufacturing by 17.2 p.c., finance, insurance and real estate by 16.6 p.c. and trade by 14.5 p.c. The increase in manufacturing was particularly significant in view of the fact that this industry accounts for over 35 p.c. of industrial employment as measured by the employment survey. Mining, forestry and transportation, communication and other utilities showed some improvement during 1965, particularly mining, although these industries have been operating at reduced levels of employment in recent years.

## 7.-Annual Average Index Numbers of Employment by Industrial Division, 1961-65, and Monthly Indexes 1965

Note. These indexes are calculated as at the last pay period of each month, on the base $1981=100$.

| Year and Month | Forestry | Mining (incl. milling) | Manu-facturing | Con-struction | Trans-porta-Communication and Other Utilitiea | Trade | Finance, Insurance and Real Estate | Service ${ }^{1}$ | Industrial Com- posite |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Averates- |  |  |  |  |  |  |  |  |  |
| 1961. | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1962. | 99.5 | 99.4 | 103.8 | 101.8 | 99.4 | 101.2 | 103.2 | 101.7 | 102.2 |
| 1983. | 96.9 | 97.9 | 106.1 | 100.9 | 100.1 | 103.5 | 107.6 | 100.1 | 104.4 |
| 1964. | 102.8 | 98.8 | 111. 1 | 105.8 | 101.5 | 108. 1 | 111.9 | 114.7 | 108.2 |
| 1965. | 104.2 | 105.1 | 117.2 | 119.7 | 108.9 | 114.5 | 116.6 | 125.8 | 114.3 |
| 1585- |  |  |  |  |  |  |  |  |  |
| January. | 93.7 | 99.5 | 111.7 | 96.1 | 97.7 | 108.3 | 114.1 | 115.0 | 107.2 |
| February | 85.8 | 100.5 | 111.9 | 94.6 | 98.1 | 108.4 | 114.7 | 116.1 | 107.2 |
| Mareh. | 74.7 | 102.0 | 113.5 | 97.1 | 99.1 | 109.3 | 115.0 | 118.1 | 108.4 |
| April. | 68.6 | 100.1 | 113.7 | 104.1 | 100.6 | 111.3 | 115.0 | 121.0 | 109.4 |
| May.. | 91.8 | 104.9 | 116.4 | 118.9 | 103.5 | 112.4 | 116.0 | 125.3 | 111.2 |
| June. | 119.3 130.5 | 108.7 110.5 | 119.2 118.5 | 128.6 124.7 | 108.1 108.6 | 116.1 | 116.1 | 130.0 | 116.7 |
| August. | 130.4 | 110.1 | 120.6 | 139.3 | 108.6 | 118.8 | 117.8 | 133.1 136.3 | 117.7 118.7 |
| September | 123.3 | 107.1 | 121.1 | 138.2 | 107.8 | 117.6 | 117.6 | 131.0 | 119.1 |
| October. | 118.6 | 105.9 | 120.8 | 138.5 | 108.2 | 118.0 | 118.0 | 129.2 | 118.6 |
| November | 116.8 | 106.5 | 120.8 | 131.5 | 106.1 | 118.4 | 118.4 | 129.1 | 118.7 |
| December. | 102.1 | 105.1 | 118.5 | 114.6 | 103.4 | 117.9 | 117.9 | 126.8 | 115.9 |

[^233]
## 8.-Annual Average Index Numbers of Employment, by Industrial Division and Group, 1961-65

Nors.-Tbese indexee refer to the last week of each month and are on the base $1981=\mathbf{1 0 0}$.

| Industry | 1961 | 1962 | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Forestry | 100.0 | 98.5 | 36.8 | 122.8 | 104.\% |
| Mining (incl. milling) | 104.0 | 99.4 | 97.9 | 38.8 | 105.1 |
| Metals..... | 100.0 | 99.4 | 98.1 | 96.9 | 103.2 |
| Goid | 100.0 | 96.3 | 92.9 | 88.1 | 81.0 |
| Copper-gold-sil | 10.0 | 100.5 | 101.8 | 101.9 | 109.6 |
| Nickel-copper | 100.0 | 99.4 | 89.1 | 95.6 | 108.8 |
| Iron. | 100.0 | 111.4 | 113.3 | 119.8 | 139.8 |
| Mineral fuele | 100.0 | 99.6 | 99.0 | 97.6 | 100.5 |
| Coal | 100.0 | 95.0 | 93.9 | 890 | 91.3 |
| Petroleum and gas well | 100.0 | 109.9 | 104.0 | 106.0 | 109.7 |
| Nou-metals (except fuels) | 100.0 | 102.3 | 105.3 | 104.7 | 106.7 |
| Asbestos. | 100.0 | 102.0 | 100.7 | 97.4 | 95.9 |
| Mannfacturtng. | 100.0 | 109.8 | 106.1 | 11.1 | 117.2 |
| Durable zoods | 100.0 | 105.9 | 109.5 | 116.7 | 126.0 |
| Non-durable goods | 100.0 | 102.1 | 103.4 | 106.8 | 110.1 |
| Foods and beverage | 100.0 | 101.5 | 101.3 | 103.8 | 106.6 |
| Slaughtering and meat proces | 100.0 | 98.4 | 98.8 | 100.7 | 104.2 |
| Dairy products. | 100.0 100.0 | 99.0 107.9 | 99.5 107.5 | 102.1 107.8 | 117.3 |
| Fruit, and vegetable proces | 108.0 | 11.1 | 108.0 | 112.9 | 118.4 |
| Grain mill producta. | 100.0 | 99.8 | 98.1 | 96.7 | 94.9 |
| Biscuits............ | 100.0 | 101.9 | 100.6 | 102.5 | 103.8 |
| Bakeries | 100.0 | 99.7 | 99.0 | 100.1 | 102.2 |
| Confectioner | 100.0 | 103.0 | 105.4 | 104.8 | 110.9 |
| Soft drinke | 100.0 | 102.5 | 104.6 | 108.3 | 110.0 |
| Distilleries | 100.0 | 96.8 | 95.0 | 98.1 | 98.6 |
| Breweries. | 100.0 | 96.9 | 97.0 | 99.0 | 98.9 |
| Tobacco processing and product | 100.0 | 105.0 | 104.0 | 102.0 | 99.2 |
| Rubber products | 100.0 | 104.3 | 107.7 | 113.3 | 117.4 |
| Leather products | 100.0 | 102.2 | 101.7 | 102.4 |  |
| Shoes (except rubber) | 100.0 | 101.6 | 100.1 | 98.2 | ${ }^{96.0}$ |
| Tertile products...t... | 100.0 100.0 | 108.2 104.4 | 112.2 109.3 | 121.2 | 126.3 |
| Teatie products. ${ }^{\text {Cotor }}$ yarn | 100.0 | 103.1 | 102.6 | 106.9 | 106.1 |
| Woollen yarn and cloth | 100.0 | 104.2 | 109.8 | 112.8 | 111.7 |
| Synthetio tertiles..... | 100.0 | 104.9 | 114.8 | 127.1 | 138.3 |
| Knitting mills... | 100.0 | 103.0 | 103.2 | 106.3 | 111.5 |
| Hosiery. | 100.0 | 101.4 | 88.9 | 88.6 | 101.2 |
| Other knitting mills | 100.0 | 104.3 | 105.6 | 310.8 | 117.9 |
| Clothing. | 100.0 | 101.7 | 104.4 | 109.9 | 112.5 |
| Men'e clothing | 100.0 | 104.6 | 108.4 | 113.8 |  |
| Women's clothin | 100.0 100.0 | 100.1 104.3 | 102.3 | 110.2 111.2 | 113.3 |
| Wood products....... | 100.0 100.0 | 104.3 102.5 | 107.4 | 111.2 109.2 | 113.4 11.6 |
| Saw, shingle and pla | 100.0 100.0 | 102.5 106.3 | 105.2 108.4 | 109.2 113.1 | 111.6 12.8 |
| - Hourehold furnitur | 100.0 | 107.9 | 108.8 | 116.1 | 126.5 |
| Paper and allied iodust | 100.0 | 102.1 | 103.2 | 106.8 | 111.1 |
| Pulp and paper mills | 100.0 | 100.7 | 101.2 | 104.9 | 108.6 |
| Printing, prblishing and allied | 100.0 | 101.8 | 101.6 | 101.4 | 105.4 |
| Commercial printing. | 100.0 | 10.3 | 101.0 | 102.9 | 105.3 |
| Printing and pablisbi | 100.0 | 101.5 | 102.1 | 99.4 | 105.2 |
| Primary metal industries. | 100.0 | 102.2 | 104.9 | 112.3 | 118.7 |
| Iron snd steel mills...... | 100.0 | 106.5 | 112.8 | 121.9 | 129.6 |
| Iren foundries... | 100.0 | 105.4 | 112.3 | 119.0 | 131.9 105.5 |
| Smelting and refining | 100.0 | 95.9 106.6 | 93.6 108.9 | 99.8 114.5 | 106.5 125.7 |
| Metal fabricating indugtries..... | 100.0 | 106.6 105.8 | 108.9 06.6 | 114.5 99.7 | 119.2 |
| Fibricated structural metals, Ornamental and architectural | 100.0 100.0 | 105.8 109.9 | 86.6 112.4 | 119.3 | 125.2 |
| Ornamentas and arehitectural | 100.0 | 107.5 | 112.5 | 119.1 | 128.7 |
| Wire and wire products ....... | 100.0 | 104.8 | 110.0 | 120.3 | 132.3 |
| Hardware, tools and cutlery | 100.0 | 109.4 | 117.4 | 128.6 | 149.5 |
| Heating equipment | 100.0 | 105.0 | 111.7 | 1105.2 | 107.1 |
| Miscellaneoue metal fabricating | 100.0 | 107.2 106.4 | 111.8 114.8 | 118.8 |  |
| Machinery (except electrical) | 100.0 100.0 | 106.4 96.8 | 114.8 111.6 | 114.8 | 132.8 |
| Agricultural implements..... Miscellaneous machinery and eq | 100.0 100 | 90.8 109.6 | 117.0 | 128.0 | 142.1 |
| Office and store machinery..... | 100.0 | 106.0 | 111.5 | 112.0 | 124.6 |
| Transportation equipment. | 100.0 | 106.5 | 111.7 | 124.2 | 137.5 |
| Aircrait and parts....... Motor vehicle manufutur | 100.0 100.0 | 98.0 108.1 | 88.4 123.3 | 9618 141.7 | 163.7 |

## 8. Annual Average Index Numbers of Employment, by Industrial Division and Group, 1961-65-concluded

| Industry | 1961 | 1962 | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Manufacturing-concluded |  |  |  |  |  |
|  |  |  |  |  |  |
| Motor vebicle parts and accessories.. | 100.0 100.0 | 106.3 121.2 | 119.2 | 138.9 118.4 | 167.9 128.5 |
| Electrical producta...... | 100.0 | 109.9 | 114.5 | 119.4 | 128.1 |
| Major appliances (incl. non-blectric) | 100.0 | 103.2 | 105.3 | 114.7 | 119.8 |
| Household radioe apd televisions... | 100.0 | 114.7 | 120.1 | 129.3 | 144.7 |
| Communications equipment. | 100.0 | 115.5 | 118.9 | 121.8 | 130.2 |
| Non-metallie mineral products | 100.0 | 105.7 | 108.3 | 113.1 | 121.3 |
| Concrete producta. . . . . . | 100.0 | 113.4 | 114.4 | 124.8 | 143.1 |
| Clay producte... | 100.0 | 105.3 | 102.2 | 105.3 | 118.6 |
| Glase and glase products | 100.0 | 101.9 | 109.1 | 111.3 | 110.0 |
| Petroleum and coal product | 100.0 | 98.8 | 96.6 | 97.0 | 105.2 |
| Petroleum refineries.... | 100.0 | 96.5 | 92.9 | 91.8 | 89.6 |
| Chemicals and chemical products | 100.0 | 100.4 | 102.0 | 105.5 | 111.1 |
| Pbarmaceuticale sad medicines | 100.0 | 102.2 | 103.8 | 107.7 | 112.9 |
| Paints and varnishes.. | 100.0 | 99.3 | 97. 1 | 98.5 | 92.5 |
| Soap and cleaning compounds. | 100.0 | 108.1 | 106.4 | 104.6 | 104.1 |
| Miacellaneoms manvfacturing induatrie | 100.0 | 107.2 | 110.8 | 117.1 | 121.5 |
|  |  |  |  |  |  |
| Building ..... | 100.0 | 102.4 | 101.0 | 105.2 | 120.5 |
| General contractors | 100.0 | 99.9 | 96.6 | 100.5 | 114.7 |
| Special trade contracto | 100.0 | 105.3 | 106.0 | 110.6 | 127.0 |
| Engineering. | 100.0 | 102.4 | 100.8 | 108.6 | 118.0 |
| Higbwaye, bridgee and atre | 100.0 | 99.8 | 95.8 | 107.5 | 116.9 |
| Otber engineering. | 100.0 | 103.0 | 106.0 | 105.8 | 120.2 |
|  |  |  |  |  |  |
| Transportation,.. | 100.0 | 98.6 | 98.1 | 99.3 | 101.3 |
| Air traneport and services. | 100.0 | 101.1 | 98.3 | 100.8 | 104.2 |
| Fater transport and services | 100.0 | 99.7 | 100.2 | 102.7 | 105.2 |
| Railway transport. | 100.0 | 97.6 | 95.6 | 96.5 | 96.1 |
| Maintensnce of equipment | 100.0 | 99.2 | 97.0 | 101.3 | 101.8 |
| Maintenance of way and structur | 100.0 | 93.9 | 91.9 | 91.5 | 85.5 |
| Railway transportation | 100.0 | 98.4 | 96.4 | 96.5 | 97.8 |
| Truck tranaport. | 100.0 | 97.8 | 103.7 | 108.2 | 118.2 |
| Bus transport, interurban and rur | 100.0 | 94.3 | 95.7 | 97.7 | 102.5 |
| Urban transit: ${ }^{\text {a }}$ H. | 100.0 | 98.5 | 99.1 | 99.4 | 110.0 |
| Hitighway and bridge mainter | 100.0 | 98.7 | 96.8 | 97.4 | 88.7 |
| Storage. Graid elevators | 100.0 | ${ }_{98.8} 9$ | 99.15 | 109.4 | 110.6 |
| Other storage and warehousin | 100.0 | 100.2 | 101.4 | 106.8 | 114.5 |
| Commmication | 100.0 | 101.2 | 103.4 | 105.5 | 108.9 |
| Radio and television broadcastiog | 100.0 | 103.3 | 105.0 | 108.7 | 111.6 |
| Telephone. | 100.0 | 100.7 | 103.8 | 106.1 | 110.8 |
| Telegraph and cable | 100.0 | 100.9 | 99.0 | 97.4 | 96.4 |
| Post office | 100.0 | 101.8 | 168.5 | 105.5 | 107.9 |
| Electric power, gas and wa | 100.0 | 103.9 | 105.5 | 106.3 | 108.6 |
| Electrio power, | 100.0 | 103.2 | 104.1 | 105.0 | 107.4 |
| Gas distribution | 100.0 | 109.6 | 112.9 | 111.5 | 112.6 |
|  |  |  |  |  |  |
| Wholessle | 100.0 | 101.1 | 102.4 | 105.4 | 110.8 |
| Retail | 100.0 | 101.7 | 104.4 | 109.6 | 118.2 |
| Food stores | 100.0 | 101.5 | 104.9 | 112.3 | 117.5 |
| Department st | 100.0 | 100.8 | 104.8 | 110.2 | 115.5 |
| Variety etores | 100.0 | 98.0 | 88.3 | 105.2 | 118.7 |
| Automotive product | 100.0 | 103.9 | 107.5 | 113.7 | 124.7 |
|  |  |  |  |  |  |
| Financial institukiods | 100.0 | 103.4 | 108.4 | 113.6 | 120.0 |
| Ingurance and real estate | 100.0 | 102.3 | 105.8 | 108.8 | 111.5 |
| Insarance carriers. | 100.0 | 102.0 | 105.0 | 107.4 | 109.6 |
|  |  |  |  |  |  |
| Recreational services | 100.0 | 100.9 | 104.5 | 109.6 | 116.9 |
| Business nervices | 100.0 | 103.1 | 109.0 | 120.6 | 137.3 |
| Personal service | 100.0 | 100.9 | 104.9 | 112.1 | 120.0 |
| Miscelladeous servic | 100.0 | 103.0 | 107.4 | 118.5 | 136.9 |
| , | 100.0 | 102.\% | 104.4 | 108.2 | 114.2 |

## 9.-Annual Average Index Numbers of Employment, by Province, 1961-65, and Monthly Indexes 1965

Note.-These indexes refer to the last week of each month and are on the base $1961=100$.

| Year and Month | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Averages- |  |  |  |  |  |  |  |  |  |  |  |
| 1961... | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1962. | 100.1 | 105.3 | 100.4 | 99.8 | 101.7 | 103.0 | 100.4 | 100.7 | 102.0 | 102.1 | 102.2 |
| 1963. | 102.0 | 101.8 | 101.1 | 100.6 | 103.0 | 105.4 | 101.6 | 102.4 | 102.3 | 104.9 | 104.4 |
| 1964. | 107.6 | 105.9 | 103.6 | 104.6 | 107.5 | 110.1 | 103.4 | 105.1 | 106.1 | 109.4 | 108.2 |
| 1965........... | 118.0 | 112.2 | 108.6 | 109.7 | 112.9 | 116.5 | 106.1 | 110.4 | 112.6 | 118.2 | 114.3 |
| 1965- |  |  |  |  |  |  |  |  |  |  |  |
| January | 99.0 | 96.1 | 102.5 | 101.0 | 105.8 | 110.7 | 100.9 | 100.2 | 105.7 | 107.0 | 107.2 |
| February | 97.4 | 95.0 | 101.9 | 109.5 | 106.1 | 110.4 | 100.2 | 100.5 | 106.0 | 108.6 | 107.2 |
| March. | 97.8 | 90.4 | 103.4 | 100.6 | 106.9 | 111.8 | 100.4 | 101.2 | 106.3 | 111.1 | 108.4 |
| April. | 101.6 | 100.4 | 106.9 | 96.6 | 107.9 | 113.0 | 102.1 | 103.7 | 105.2 | 112.9 | 109.4 |
| May | 111.6 | 117.9 | 111.5 | 106.4 | 111.8 | 115.9 | 105.3 | 109.7 | 110.7 | 116.7 | 113.2 |
| June. | 127.7 | 117.1 | 113.1 | 114.5 | 115.1 | 118.3 | 108.9 | 113.6 | 115.7 | 121.5 | 116.7 |
| July.. | 134.4 | 123.3 | 113.9 | 118.2 | 116.0 | 117.8 | 110.7 | 118.3 | 118.6 | 124.4 | 117.7 |
| August | 137.0 | 124.9 | 113.2 | 120.4 | 118.4 | 119.1 | 111.0 | 118.0 | 119.2 | 126.2 | 119.7 |
| September | 134.7 | 123.8 | 113.2 | 117.0 | 117.5 | 120.4 | 109.6 | 117.0 | 117.3 | 124.8 | 119.1 |
| October. | 132.3 | 127.0 | 112.5 | 115.1 | 117.1 | 120.5 | 108.9 | 115.8 | 116.3 | 123.0 | 118.6 |
| November | 127.1 |  |  |  |  |  |  |  | 116.1 |  | 118.7 |
| December | 115.8 | 106.2 | 102.5 | 110.4 | 114.2 | 119.1 | 106.2 | 111.5 | 114.1 | 120.1 | 115.9 |

10.-Annual Average Index Numbers of Employment, by Metropolitan Area, 1961-65,
and Monthly Indexes 1965

Note.-These indexes refer to the last week of each month and are on the base $1961=100$.

| Year and Month | Montreal | Quebec | Toronto | OttawaHull | Hamilton | Windsor | Winnipeg | Vancouver |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Averages- |  |  |  |  |  |  |  |  |
| 1961... | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1962. | 101.5 | 103.4 | 102.9 | 102.3 | 104.1 | 98.8 | 99.4 | 101.0 |
| 1973. | 103.0 | 106.4 | 105.8 | 103.2 | 107.3 | 105.5 | 101.2 | 104.3 |
| 1964. | 107.7 | 108.1 | 110.5 | 106.1 | 113.4 | 116.8 | 104.1 | 109.6 |
| 1965. | 113.9 | 113.0 | 115.8 | 111.5 | 119.8 | 132.7 | 107.4 | 117.9 |
| 1965- |  |  |  |  |  |  |  |  |
| January. | 108.3 | 106.4 | 111.2 | 106.3 | 113.8 | 125.0 | 102.9 | 108.9 |
| February | 108.8 | 107.2 | 111.2 | 105.6 | 114.0 | 102.4 | 102.0 | 109.7 |
| March | 109.7 | 108.4 | 112.3 | 106.6 | 115.6 | 124.6 | 102.6 | 112.4 |
| April.. | 111.4 | 111.1 | 112.9 | 107.7 | 118.0 | 133.0 | 104.5 | 114.5 |
| May. | 113.1 | 112.1 | 115.0 | 111.6 | 119.6 | 134.4 | 106.6 | 116.4 |
|  | 114.6 | 116.1 | 116.3 | 114.5 | 120.7 | 138.2 | 109.4 | 120.0 |
| July. | 113.8 | 115.9 | 115.1 | 115.2 | 121.8 | 126.1 | 110.4 | 121.8 |
| August. | 116.7 | 118.1 | 116.6 | 114.9 | 123.3 | 136.0 140.8 | 110.8 | 122.4 |
| September | 117.3 | 115.1 115.3 | 118.9 120.2 | 113.7 114.1 | 123.4 | 140.8 142.0 | 110.0 110.3 | 122.4 |
| Novembe | 119.0 | 116.0 | 120.9 | 114.0 | 123.9 | 144.2 | 110.7 | 122.3 |
| December. | 116.7 | 114.5 | 118.8 | 113.4 | 120.9 | 145.2 | 108.8 | 121.5 |

Weekly Wages and Salaries.-Average weekly wages and salaries have increased substantially in the years for which current payroll statistics have been collected, rising from $\$ 23.44$ in 1939 to $\$ 91.01$ in 1965. The upward movement gained momentum after the end of the War and average annual increases from 1946 to 1952 were more than twice
as great as those between 1939 and 1946. After 1952 the rate of increase, in terms of year-to-year percentage changes, fell slightly below that recorded during the war years, particularly between 1959 and 1962, when average earnings rose at rates of about 3 p.c. per annum. Over the next three years the rate increased moderately and earnings in 1965 were 5.2 p.c. higher than in 1964.

## 11.-Annual Index Numbers of Employment and Average Weekly Wages and Salaries, by Industry, Province and Urban Area, 1963-65

| Industry, Province and Urban Area | Employment$(1961=100)$ |  |  | Average Weekly Wages and Salaries |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1963 | 1964 | 1965 | 1963 | 1964 | 1965 |
| Industry |  |  |  | \% | \% | \$ |
| Forestry. | 96.9 | 102.8 | 104.2 | 87.02 | 92.13 | 96.81 |
| Mining (incl. milling) | 97.9 | 98.8 | 105.1 | 101.96 | 105.73 | 111.53 |
| Manufacturing. | 106.1 | 111.1 | 117.2 | 86.90 | 90.42 | 94.78 |
| Durable goods ${ }^{1}$. | 109.5 | 116.7 | 126.0 | 94.16 | 97.96 | 102.97 |
| Non-durable goods ${ }^{1}$ | 103.4 | 106.6 | 110.1 | 80.69 | 83.79 | 87.24 |
| Construction...... | 100.9 | 105.8 | 119.7 | 95.27 | 100.06 | 107.92 |
| Transportation, communication and ities.. | 100.1 | 101.5 | 103.9 | 89.71 | 93.32 | 98.77 |
| Trade.. | 103.5 | 108.1 | 114.5 | 68.80 | 71.01 | 73.49 |
| Finance, insurance and real estate | 107.6 | 111.9 | 116.6 | 77.63 | 81.88 | 88.29 |
| Service, | 106.1 | 114.7 | 125.8 | 60.44 | 62.30 | 65.76 |
| Industrial Composite. | 104.4 | 108.2 | 114.3 | 83.27 | 86.51 | 91.01 |
| Province |  |  |  |  |  |  |
| Newioundland. | 102.0 | 107.6 | 118.0 | 74.89 | 77.42 | 80.22 |
| Prince Edward Island | 101.8 | 105.9 | 112.2 | 58.70 | 60.49 | 62.48 |
| Nova Scotia. | 101.1 | 103.6 | 108.6 | 68.03 | 70.14 | 73.43 |
| New Brunswic | 100.6 | 104.6 | 109.7 | 68.28 | 71.01 | 74.76 |
| Quebec. | 103.0 | 107.5 | 112.9 | 80.99 | 84.46 | 88.62 |
| Ontario. | 105.4 | 110.1 | 116.5 | 86.22 | 89.82 | 94.41 |
| Manitoba. | 101.6 | 103.4 | 106.1 | 77.56 | 79.02 | 82.28 |
| Saskatchewan | 102.4 | 105.1 | 110.4 | 79.32 | 81.27 | 84.90 |
| Alberta. | 102.3 | 106.1 | 112.6 | 83.61 | 85.82 | 89.88 |
| British Columbia | 104.9 | 109.4 | 118.2 | 90.10 | 94.11 | 100.71 |
| Urban Area |  |  |  |  |  |  |
| Corner Brook, Nfld. | 102.2 | 103.5 | 114.2 |  |  |  |
| St. John's, Nfld | 108.3 | 110.5 | 126.3 | 63.85 | 66.72 | 69.94 |
| Halifax, N.S. | 101.5 | 104.9 | 108.7 | 69.64 | 72.21 | 76.21 |
| Sydney, N.S. | 102.0 | 95.9 | 99.9 | 81.67 | 83.66 | 83.77 |
| Moncton, N.B. | 98.9 | 104.4 | 110.2 | 65.72 | 67.42 | 70.42 |
| Saint John, N.B. | 103.3 | 99.0 | 104.4 | 69.67 | 72.12 | 76.36 |
| Chicoutimi, Que. | 96.2 | 101.8 | 102.7 | 100.52 | 102.84 | 105.51 |
| Drummondville, Que. | 111.2 | 121.3 | 125.9 | 68.10 | 69.71 | 73.47 |
| Granby, Que., | 96.8 | 100.3 | 104.8 | 69.32 | 72.49 | 74.39 |
| Montreal, Que. | 103.0 | 107.7 | 113.9 | 82.35 | 85.89 | 90.20 |
| Ottawa, Ont.-Hull, Que. | 103.2 | 106.1 | 111.5 | 77.46 | 80.72 | 84.51 |
| Quebec, Que........ | 106.4 | 108.1 | 113.0 | 71.98 | 74.08 |  |
| Rouyn-Noranda, Que. | 105.5 105.3 | 117.8 111.4 | 127.4 118.8 | 84.19 61.29 | 85.55 | 87.65 69 |
| St. Jean, Que....... | 105.3 90.7 | 119.4 | 118.8 116.2 | 61.29 | 65.31 72.84 | 69.08 76.12 |
| St. Jérôme, Que. | 109.3 | 118.6 | 120.4 | 65.92 | 69.20 | 71.18 |
| Shawinigan, Que | 94.5 | 99.5 | 106.1 | 90.92 | 90.68 | 94.42 |
| Sherbrooke, Que. | 107.7 | 113.6 | 116.7 | 70.22 | 73.68 | 77.14 |
| Sorel, Que......... | 123.5 | 137.5 97.8 | 146.1 | 87.98 91.96 | 93.68 94 | 98.84 |
| Trois-Rivieres, Que. | 104.5 | 97.8 109.9 | 96.5 112.2 | 91.96 76.53 | 94.52 79.91 | 97.11 81.74 |
| Valleyfield, Que. | 101.0 | 105.3 | 119.9 | 80.93 | 79.91 84.90 | 89.46 |
| Belleville, Ont. | 105.8 | 109.0 | 109.2 | 72.06 | 76.01 | 89.90 80 |
| Brampton, Ont. | 148.1 | 176.0 | 200.0 | 85.16 | 89.40 | 92.39 |
| Brantford, Ont. | 107.1 | 112.0 | 125.3 | 79.04 | 81.76 | 88.46 |
| Brockville, Ont. | 111.4 | 115.0 | 119.8 | 84.36 | 86.17 | 90.09 |

[^234]11.-Annual Index Numbers of Employment and Average Weekly Wages and Salarles, by Industry, Province and Urban Area, 1963-65-concluded

| Urban Area | Employment$(1961=100)$ |  |  | Average Weekly Wages and Salaries |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1963 | 1984 | 1965 | 1963 | 1964 | 1965 |
| Urban Aren-concluded |  |  |  | \$ | \% | \$ |
| Cornvall, Ont. | 100.8 | 114.2 | 117.0 | 83.63 | 85.93 | 90.65 |
| Fort, William-Port Arthur, Ont. | 100.6 | 105.0 | 116.2 | 82.71 | 86.20 | 89.67 |
| Guelph, Ont. | 107.8 | 112.1 | 123.2 | 76.97 | 80.37 | 85.02 |
| Hamilton, Ont. | 167.3 | 113.4 | 119.8 | 91.18 | 94.76 | 99.28 |
| Kingston, Ont. | 105.6 | 114.9 | 122.0 | 82.89 | 87.24 | 89.95 |
| Kitchener, Ont | 114.1 | 120.7 | 129.1 | 76.37 | 79.85 | 83.47 |
| London, ${ }_{\text {Ont. }}$. | 108.4 | 113.2 | 118.8 | 78.03 | 83.09 | 85.39 |
| Niagara Falls, Ont. | 102.4 | 107.7 | 110.6 | 83.95 | 87.86 | 92.53 |
| North Bay, Ont. . | 98.5 | 100.0 | 104.0 | 83.24 | 88.19 | 91.98 |
| Oshawa, Ont. | 120.2 | 130.3 | 148.1 | 103.83 | 108.29 | 117.59 |
| Peterborough. Ont. | 110.3 | 118.4 | 114.2 | 02.66 | 94.69 | 98.34 |
| Bt. Catharines, Ont. | 107.4 | 308.8 | 131.9 | 93.00 | 89.30 | 108.38 |
| St. Thomas, Ont. | 120.4 | 129.4 | 130.4 | 79.79 | 80.68 | 83.41 |
| Sarnis, Ont. | 104.1 | 106.4 | 111.2 | 108.15 | 111.63 | 116.38 |
| Sault Ste. Marie, Ont. | 107.0 | 112.0 | 115.7 | 106.95 | 106.20 | 110.92 |
| Stratiord, Ont. | 113.2 | 121.8 | 129.7 | 75.81 | 76.83 | 81.45 |
| Sudbury, Ont. | 84.9 | 90.2 | 100.0 | 94.54 | 97.22 | 101.90 |
| Timmim, Ont, | 98.1 | 94.8 | 93.8 |  | 77.16 | 82.06 |
| Toronto, Ont. | 105.8 | 110.5 | 115.8 | 87.52 | 90.82 | 94.50 |
| Welland, Ont. | 99.8 | 104.6 | 110.5 | 100.72 | 105.58 | 108.22 |
| Windaor, Ont. | 105.5 | 116.8 | 132.7 | 95.09 | 101.03 | 107.81 |
| Woodsteck, Ont. | 115.7 | 120.8 | 129.9 | 79.47 | 82.91 | 87.09 |
| Winnipeg, Man. | 101.2 | 104.1 | 107.4 | 74.28 | 76.28 | 79.07 |
| Regina, Sask. | 108.2 | 112.9 | 116.3 | 77.99 | 79.90 | 82.77 |
| Saskstoon, Sask | 101.5 | 108.1 | 115.2 | 72.50 | 74.84 | 78.30 |
| Calgary, Alta. | 102.2 | 106.8 | 115.3 | 83.33 | 86.65 | 89.80 |
| Edmonton, Alta. | 104.7 | 109.9 | 117.4 | 78.67 | 80.48 | 84.10 |
| Vancouver, B.C. | 104.3 | 109.6 | 117.9 | 88.57 | 92.47 | 97.83 |
| Victoria, B.C. | 108.7 | 112.0 | 120.0 | 80.96 | 82.56 | 88.18 |

12.-Annual Average Weekly Wages and Salaries, by Industrial Division, 1561-65, and Monthly Averages 1965

| Yestr and Month | Forestry | Mining (incl. milling | Manu-factiIint | ConBtrich tion | Transtion, Comcation and Other <br> Utilities | Trade | Finance, Insurance and Real Estate | Service ${ }^{1}$ | Industrial Compcaite |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | * | 8 | \$ | \% | \$ | * | \$ | * |
| $\begin{gathered} \text { Aperastes- } \\ 1961 . . . . . . \end{gathered}$ | 79.02 | 95.57 | 81.55 | 88.82 | 83.38 | 64.54 | 72.82 | 57.87 | 78.24 |
| 1962.. | 82.15 | 98.53 | 84.00 | 91.19 | 86.00 | 66.53 | 75.35 | 59.31 | 80.54 |
| 1963. | 87.02 | 101.96 | 86.90 | 85.27 | 89.71 | 68.80 | 77.68 | 60.44 | 83.27 |
| 1964. | 92.13 | 105.73 | 90.42 | 100.06 | 98.32 | 71.07 | 81.88 | 62.30 | 88.51 |
| 1985.. | 96.81 | \$11.53 | 94.78 | 107.92 | 98.77 | 73.49 | 88.29 | 65.76 | 91.01 |
| 1945- |  |  |  |  |  |  |  |  |  |
| January... | 92.94 | 110.31 | 93.18 | 108.94 | 96.85 | 72.40 | 85.02 | 64.03 | 86.07 |
| February | 98.68 | 110.34 | 92.75 | 104.10 | 97.77 | 72.30 | 88.13 | 64.43 | 89.18 |
| March... | 100.60 | 110.70 | 94.75 | 108.54 | 96.31 | 72.57 | 86.68 | 64.18 | 00.03 |
| April. | 98.32 | 109.90 | 94.88 | 105.73 | 97.58 | 72.93 | 87.84 | 64.68 | 90.32 |
| May. | 91.61 | 108.61 | 94.52 | 105.43 | 98.00 | 73.59 | 88.24 | 65.04 | 90.41 |
| June. | 92.60 | 110.93 | 94.66 | 106.3 t | 98.02 | 74.24 | 88.72 | 65.94 | 90.88 |
| Jaly. | 93.82 | 109.77 | 93.59 | 110.20 | 98,64 | 74.53 | 89.23 | 66.11 | 80.95 |
| August. | 83.71 | 310.37 | 93.97 | 110.88 | 98.51 | 74.28 | 89.04 | 65.79 | 91.12 |
| Oetober... | 101.88 | $\pm 15.65$ | 97.10 | 115.29 | 101.53 | 73.94 | 89.26 | 67.47 | 93.56 |
| November | 103.07 | 115.81 | 97.42 | 114.02 | 101.56 | 73.60 | 89.74 | 87.48 | 93.44 |
| December. | 05.67 | 114.53 | 95.07 | 99.83 | 100.32 | 73.97 | 00.46 | 67.42 | 91.00 |

[^235]Hours and Earnings of Hourly Rated Wage-Earners.-The monthly survey of employment and payrolls covers statistics of hours of work and paid absence of those wage-earners for whom records of hours are maintained, together with the corresponding totals of gross wages paid. These wage-earners are mainly hourly rated production workers; information on hours is frequently not kept by employers for ancillary workers nor, in many industries and establishments, for any wage-earners. Salaried employees are excluded by definition from the series. As a result of these exclusions, data are available for fewer industries and workers than are covered in the employment and average weekly wage and salary statistics.

During the period 1961-65, there was little change in average weekly hours but average hourly and weekly wages rose substantially. For the most part, upward wage-rate revisions in all industries were responsible for the increases. Technological changes, which in many cases involve the employment of more highly skilled workers at the expense of those in the lower-paid occupations, also contributed to the advance of average hourly earninge. From 1961 to 1965 , average weekly wages rose 16.8 p.c. in manufacturing, 14.1 p.c. in mining and 22.6 p.c. in construction. Average hourly earnings increased 15.8 p.c. in manufacturing, 11.2 p.c. in mining and 22.7 p.c. in construction. In manufacturing, 1965 average hourly earnings of $\$ 2.12$ and average weekly wages of $\$ 86.92$ represented increases of 4.9 p.e. and 4.7 p.c., respectively, over the 1964 levels.
13.-Annual Average Weekly Hours and Earnings of Hourly Rated Wage-Earners in Specified Industries, 1861-65, and Monthly Averages 1965

| Year <br> and Month | All Manufactures |  |  | Mining (incl, milling) |  |  | Construction |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Average Weekly Hours | Average Hourly Eardings | Average Weekly Wages | Average Weekly Hours | Average Hourly Earnings | Average Weekly Wages | Average Weekly Hours | Average Hourly Earninge | Average Weakly Wages |
|  | No. | $\delta$ | \% | No. | \$ | * | No. | \$ | \% |
| Averages- |  |  |  |  |  |  |  |  |  |
| 1961.. | 40.8 | 1.83 | 74.45 | 41.8 | 2.13 | 88.82 | 41.4 | 2.07 | 85.75 |
| 1962.......... | 40.7 | 1.88 | 76.75 | 41.7 | 2.18 | 90.98 | 41, 1 | 2.15 | 88.33 |
| 1983.......... | 40.8 | 1.95 | 79.51 | 42.0 | 2.24 | 92.87 | 41.2 | 2.24 | 92.20 |
| 1964.......... | 41.0 | 2.02 | 82.86 | 42.2 | 2.81 | 97.43 | 41.4 | 2.35 | 97.38 |
| 1965.......... | 41.0 | 2.12 | 86.88 | 42.5 | 2.43 | 103.30 | 41.4 | 2.54 | 105.15 |
| 1965- |  |  |  |  |  |  |  |  |  |
| January | 41.0 | 2.08 | 85.25 | 4.8 | 2.37 | 101.33 | 40.4 | 2.50 | 100.96 |
| February..... | 40.6 | 2.08 | 84.48 | 42,3 | 2.41 | 101.77 | 40.0 | 2.52 | 100.60 |
| March........ | 41.3 | 2.11 | 87.11 | 43.1 | 2.40 | 103.16 | 41.0 | 2.53 | 108.58 |
| April. ......... | 41.1 | 2.12 | 87.03 | 42.3 | 2.38 | 101.18 | 40.2 | 2.55 | 102.65 |
| May.......... | 41.1 | 2.11 | 86.38 | 41.9 | 2.40 | 100.41 | 41.3 | 2.49 | 102.62 |
| June........... | 41.2 | 2.11 | 88.87 | 43.0 | 2.41 | 103.63 | 41.9 | 2.47 | 103.47 |
| Juy | 40.8 | 2.09 | 85.38 | 41.9 | 2.43 | 101.88 | 43.7 | 2.47 | 108.16 |
| August........ | 41.1 | 2.09 | 86.10 | 42.2 | 2,42 | 102.40 | 43.4 | 2.51 | 109.05 |
| September... | 41.4 | 2.13 | 88.08 | 42.0 | 2.45 | 103.03 | 43.3 | 2.58 | 110.84 |
| October.... . | 41.6 | 2.15 | 89.53 | 43.3 | 2.49 | 107.72 | 43.8 | 2.60 | 113.94 |
| November. . | 41.5 | 2.16 | 89.81 | 43.2 | 2.50 | 107.76 | 42.3 | 2.65 | 111.84 |
| December.... | 38.7 | 2.18 | 86.40 | 42.0 | 2.51 | 105.31 | 35.4 | 2.65 | 93.93 |

## 14.-Aperage Weekly Hours and Earnings of Houriy Rated Wage-Earners in Specifled Industries and Selected Urban Areas, 1863-45

| Industry, Province and Urban Area | Average Weekly Houre |  |  | Average <br> Hourly Earnings |  |  | Average Weekly Wagea |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1963 | 1964 | 1965 | 1963 | 1964 | 1965 | 1963 | 1964 | 1965 |
|  | No. | No. | No. | * | \$ | \$ | \$ | \$ | 8 |
| Industry |  |  |  |  |  |  |  |  |  |
| Mining, Including milling. | 42.0 | 42.2 | 42.5 | 2.84 | 2.31 | 2.43 | 53.87 | 97.48 | 103.36 |
| Metal mining... | 41.5 | 41.7 | 41.9 | 2.32 | 2.39 | 2.52 | 96.22 | 99.48 | 105.76 |
| Coal mining. | 42.6 | 42.2 | 41.3 | 1.86 | 1.82 | 1.96 | 79.25 | 80.84 | 80.68 |
| Manufacturing | 40.8 | 41.4 | 41.6 | 1.95 | 2.02 | 2.12 | 79.51 | 82.56 | 86.89 |
| Durable goods ${ }^{\text {a }}$ | 41.4 | 41.6 | 41.7 | 2.12 | 2.20 | 2.31 | 87.83 | 91.60 | 96.11 |
| Non-durable goods | 40.3 | 4 C .5 | 40.4 | 1.79 | 1.85 | 1.93 | 72.02 | 74.37 | 77.87 |
| Construction | 41.2 | 41.4 | 41.4 | 2.24 | 2.35 | 2.54 | 92.20 | 97.39 | 105.15 |
| Building ............. | 39.0 | 39.5 | 39.4 | 2.33 | 2.45 | 2.62 | 90.78 | 95.43 | 103.23 |
| Highways, bridgea and streets. | 47.2 | 47.4 | 46.0 | 1.83 | 1.95 | 2.09 | 86.66 | 92.40 | 96.09 |
| Other- |  |  |  |  |  |  |  |  |  |
| Higbway and bridge maidtenance. | 39.4 | 39.8 | 40.1 | 1.75 | 1.81 | 1.89 | 68.91 | 71.49 | 75.87 |
| Hotels, restaurants and taverne | 37.4 | 36.6 | 36.1 | 1.11 | 1.17 | 1.22 | 41.54 | 42.70 | 44.16 |
| Laundries, cleaners and pressers. | 40.4 40.0 | 38.8 | 39.2 | 1.09 | 1.15 | 1.23 | 43.58 | 45.84 | 48.02 |
| Province Mantufaeturing |  |  |  |  |  |  |  |  |  |
| Newfoundland | 40.7 | 40.4 | 41.2 | 1.67 | 1.73 | 1.75 | 68.06 | 69.84 | 71.89 |
| Nova Scotia. | 40.5 | 41.2 | 40.7 | 1.65 | 1.72 | 1.77 | 66.72 | 70.77 | 71.98 |
| New Brunswick | 41.0 | 41.2 | 41.6 | 1.63 | 1.68 | 1.75 | 68.68 | 68.07 | 72.96 |
| Quebrec.. | 41.5 | 41.8 | 41.8 | 1.75 | 1.81 | 1.88 | 72.70 | 75.70 | 78.08 |
| Ontario | 40.9 | 41.2 | 41.1 | 2.06 | 2.13 | 2.25 | 84.11 | 87.84 | 92.33 |
| Manitoba | 40.0 | 40.3 | 40.4 | 1.75 | 1.78 | 1.84 | 70.05 | 71.62 | 74.13 |
| Saskatchewan | 39.0 | 39.4 | 39.9 | 2.05 | 2.10 | 2.15 | 79.84 | 82.68 | 87.42 |
| Alberta. | 39.7 | 40.1 | 40.2 | 2.01 | 2.07 | 2.14 | 79.83 | 82.81 | 86.24 |
| Britieh Columbia. | 38.0 | 38.0 | 38.0 | 2.36 | 2.47 | 2.62 | 89.74 | 93.69 | 99.52 |
| Selected Urban Area Manufacturing |  |  |  |  |  |  |  |  |  |
| Montreal. | 40.8 | 41.1 | 41.2 | 1.79 | 1.85 | 1.93 | 73.00 | 76.10 | 79.34 |
| Toronto. | 40.8 | 41.1 | 45.0 | 1.99 | 2.07 | 2.16 | 81.40 | 85.15 | 88.18 |
| Hamiltou | 40.1 | 40.6 | 40.4 | 2.31 | 2.39 | 2.52 | 92.78 | 97.08 | 101.71 |
| Windsor | 42.5 | 42.7 | 42.1 | 2.41 | 2.52 | 2.67 | 102.28 | 107.68 | 112.26 |
| Winaipeg. | 39.8 | 40.2 | 40.2 | 1.73 | 1.76 | 1.82 | ${ }^{68.97}$ | 70.94 | 73.28 |
| Vancouver | 37.9 | 37.8 | 38.0 | 2.31 | 2.40 | 2.55 | 87.45 | 90.91 | 96.54 |

[^236]
## Subsection 2.-Earnings and Hours in Manufacturing Industries*

Information obtained in an annual survey of earnings and hours in manufacturing relating to the last week of October supplements the monthly data dealt with in Subsection 1. The survey was suspended in 1961 and 1962 but resumed in 1963. Separate figures of hours and earnings of men and women wage-earners and salaried employees were obtained in each survey and additional material has been collected periodically. Percentage distributions of wage-earners in a given range of hours were compiled each year from 1946 to 1949 and every third year thereafter to 1958 and again in 1965; statistics are shown for the

[^237]latest survey in Table 19. Percentage distributions of wage-earners and salaried employees by amounts earned in the survey week were obtained triennially from 1950-59 and again in 1964. Table 20 summarizes data on earnings of both groups of manufacturing employees.

The annual survey is limited to establishments usually employing 15 or more persons and covers approximately 90 p.c. of all employees reported to the annual Census of Manufactures. Establishments are asked to report for all casual, part-time and full-time employees on their staffs in the survey week, excluding proprietors, pensioners, homeworkers, employees absent without pay throughout the week, and staffs in manufacturers' separately organized sales offices. Gross earnings for the week are required, including regularly paid bonuses, overtime pay and amounts paid for absences in the survey week. The reported hours comprise part-time, full-time and overtime hours worked and hours of paid absence. The general averages obtained are usually very similar to those derived from the corresponding monthly survey.

Over the past 16 years, total employment as reported to this survey has increased 44.1 p.c., the durable goods industries absorbing 53.1 p.c. of the expansion. The relative sex composition of the manufacturing work force did not alter significantly over the period, altbough an increase of 68.4 p.c. was reported in the number of males employed compared with a gain of 37.6 p.e. in female employees; the relative proportion of men in the work force rose to 76.4 p.c. from 75.3 p.c. in 1949 . During the same period, the percentage increase in salaried employees was three times as high as for wage-earners, being 97.7 p.c. for the former as against 32.7 p.c. for the latter. It should be noted, however, that the acceleration in the increase in the number of salaried employees was more pronounced in the firat half of the period, a trend associated with developments in planning, administration and record-keeping which increased requirements for professional and clerical personnel, and with changes in manufacturing processes which have frequently reduced employment for production workers per unit produced. Changes in the industrial distribution of the employees also contribute to variations in the ratio of salaried personnel to wage-earners, which in any one period may be further influenced by seasonal, market and other conditions affecting levels of production. These usually cause sharper fluctuations in numbers of wage-earners than of salaried employees. Nevertheless, Table 16 shows that since 1956 this group has ranged between 22.9 p.c. and 24,4 p.c. of all employees in manufacturing. Of more particular interest in this regard is the pronounced shift within the salaried class from the clerical category to the "other salaried" personnel group, which includes managerial, professional, technical and supervisory employees. Since 1951, when statistics for clerical workers were first segregated from all salaried staff, the "other salaried" component has expanded from less than one third to one half this class of employee. Within the clerical category itself there has been a marked shift in the sex-composition, men now constituting just over one half of the total number compared with 58.3 p.c. in 1951.

The upward movement in hourly earnings and weekly wages and salaries in the 1956-65 period is apparent from Table 15. In each of these categories of income, men recorded advances of 40.4 p.c., 40.6 p.c. and 40.3 p.c., respectively, since the earlier year; in the same period, women's average hourly earnings increased by 41.0 p.c., their weekly wages by 39.6 p.c. and their salaries by 40.6 p.c.

Tables 17 and 18 show the 1965 averages of hours and earnings for wage-earners and salaried employees, respectively, for major industry groups, the provinces and the six largest metropolitan areas. Average weekly earnings of the clerical and "other salaried" components of the salaried class are also included for 1965 in the latter table.

It will be noted that women earn consistently lower average wagea and salaries than do men in their industrial distributions. This results not only from pay differentials and occupational differences but also from such factors as a frequently shorter work week for women, a greater incidence of part-time work and absenteeism among them, their higher proportions of younger and less experienced workers, and their industrial distributions.
15.-Average Earnings of Male and Female Emplogees in Manufacturing, Survey Week 1956-65, and Percentage Increases over Previous Year
Norts, -Survey week is the lant week of October. This survey was not conducted in 1961 and 1962.

| Year | Male |  | Female |  | Both Sexea |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Average Earnings | Increase over Previous Year | Average Earnings | Increase over Previons Year | Average Earnings | Increase over Previous Year |
|  | Average Hotray Wages |  |  |  |  |  |
|  | 3 | p.c. | 5 | p.c. | 8 | p.c. |
| 1958....................................... | 1.66 | 6. 7 | 1.00 | 5.3 | 1.53 | 6.2 |
| 1957. | 1.75 | 5.4 | 1.05 | 5.0 | 1.81 | 5.2 |
| 1958. | 1.80 | 2.9 | 1.08 | 2.9 | 1.65 | 2.5 |
| 1959. | 1.88 | 4.4 | 1.11 | 2.8 | 1.72 | 4.2 |
| 1960. . . . . . . . . . . . . . . . . . . . . . . . . . | 1.98 | 2.7 | 1.14 | 2.7 | 1.77 | 2.9 |
| 1863. .................................... | 2.12 | 0.8 | 1.27 | 11.4 | 1.95 | 10.2 |
| 1964. | 2.21 | 4.2 | 1.32 | 3.9 | 2.02 | 3.6 |
| 1985................................... | 2.33 | 5.4 | 1.41 | 6.8 | 2.13 | 5.4 |
|  | A ferage Whercit Wages |  |  |  |  |  |
|  | $\leqslant$ | p.e. | 8 |  | \$ | p.e. |
| 1058. | 70.67 | 5.7 | 39.29 | 4.7 | 63.97 | 5.7 |
| 1957.................................... | 72.21 | 2.3 | 39.49 | 0.5 | 65.31 | 2.1 |
| 1958, . . . .............................. | 75.08 | 3.9 | 41.90 | 6.1 | 67.85 | 8.3 |
| 1959................................... | 79.20 | 5.6 | 43.36 | 3.5 | 71.35 | 5.2 |
| 1960.................................... | 80.84 | 1.4 | 43.96 | 1.4 | 72.39 | 1.5 |
| 1968, .................................... | 89.86 | 11.8 | 49.22 | 12.0 | 80.10 | 11.6 |
| 1964.................................. | 94.00 | 3.8 | 51.41 | 4.4 | 84.35 | 4.4 |
| 1865................................ | 99.38 | 5.7 | 54.85 | 6.7 | 89.32 | 5.9 |
|  | Aferagi Wexkly Salamiga |  |  |  |  |  |
|  | $\bigcirc$ | p.c. | \$ | p.e. | * | p.c. |
| 1956.................................... | 99.05 | 6.9 | 49.31 | 4.9 | 85.23 | 8.8 |
| 1857.................................... | 104. 63 | 5.6 | 51.84 | 5.1 | 89.92 | 5.5 |
| 1958..................................... | 108.34 | 3.5 | 54.07 | 4.3 | 98.74 | 4.2 |
| 1959................................. | 112.78 | 4.1 | 55.73 | 3.1 | 97.10 | 3.6 |
| 1960. | 116.41 | 8.2 | 57.98 | 4.0 | 100.47 | 8.5 |
| 1988.................................... | 128.50 | 10.4 | 64.17 | 10.7 | 111.29 | 19.8 |
| 1964.......... . . . . . . . . . . . . . . . . . . . . | 133.55 | 3.9 | 66.51 | 3.6 | 115.64 | 3.8 |
| 1965.... +......... . . . . . . . . . . . . . . . | 139.00 | 4.1 | 69.31 | 4.2 | 120.27 | 4.1 |

## 16.-Proportions of Male and Female Employees classified as Salaried Staff, Surfey Week 1956-65

Nors.--Survey week in the last week of October. This survey was not conducted in 1961 and 1962.

| Year | Durable Goods |  |  | Non-durable Gooda |  |  | All Manutacturing |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Male | Female | Both Sexea | Male | Female | Both Sezes | Male | Female | Both Sexes |
|  | p.c. | p.o. | p.c. | p.c. | p.e. | p.c. | p.e. | p.c. | p.e. |
| 1956. | 19.4 | 47.5 | 22.8 | 24.1 | 20.9 | 23.0 | 21.4 | 27.8 | 22.9 |
| 1957. | 20.8 | 49.8 | 24.3 | 24.0 | 22.2 | 23.4 | 22.2 | 29.2 | 23.8 |
| 1958. | 21.9 20.5 | 48.6 47.8 | 25.0 23.7 | 24.7 24.4 | 22.2 21.8 | 23.9 23.5 | 23.2 22.3 | 28.7 27.9 | 24.4 23.6 |
| 1859. | 20.5 | 47.2 | 23.7 | 24.4 | 21.8 | 23.5 | 22.3 | 27.9 | 23.6 |
| 1080. | 22.0 | 49.2 | 25.2 | 24.3 | 22.6 | 23.8 | 23.1 | 28.7 | 24.4 |
| 1983. | 21.4 | 44.2 | 24.2 | 25.0 | 22.2 | 24.0 | 23.1 | 27.6 | 24.1 |
| 1064. | 21.5 | 43.7 | 24.3 93 | 25.2 25.6 | 22.0 | 24.1 24.5 | 23.2 23.1 | 27.4 27.5 | 24.2 24.1 |
| 1985. | 21.1 | 42.4 | 23.8 | 25.6 | 22.2 |  | 23.1 | 27.5 | 24.1 |

## 17.-Average Hours and Earnings or Wage-Earners in Manufacturing, by Industry, Province and Selected Urban Area, Survey Week 1965

Nors.-Survey week in the lant week of October. Based on the anrevised atandard industrial classification.

| Industry, Province and Urban Area | Average Weekly Нонгя |  |  | Average Bourly Earninge |  |  | Average Weeldy Earring |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Male | Fermale | Both Seres | Male | Female | Both Serea | Male | Female | Both Serea |
|  | No. | No. | No. | \% | \$ | \$ | \% | \$ | \$ |
| Indust |  |  |  |  |  |  |  |  |  |
| Food and beverages., | 42.8 | 38.0 | 41.5 | 2.08 | 1.36 | 1.87 | 86.97 | 61.64 | 77.58 |
| Tobacco and tobseco products. | 38.1 | 37.4 | 37.7 | 2.55 | 2.24 | 2.39 | 97.40 | 83.87 | 00.31 |
| Rubber products..... | 43.1 | 38.8 | 42.1 | 2.44 | 1.53 | 2.25 | 105.14 | 59.27 | 94.96 |
| Leather producta. <br> Tertile producte (except clothing) | 41.0 | 38.8 | 39.9 | 1.74 | 1.23 | 1.49 | 71.24 | 47.77 | 59.43 |
|  | 43.9 | 40.4 | 42.7 | 1.78 | 1.38 | 1.66 | 78.48 | 55.84 | 70.79 |
| Clothing (certile and fur) | 41.9 | 38.4 | 39.2 | 1.89 | 1.28 | 1.43 | 79.10 | 48.08 | 56.00 |
| Wood producta.......... | 42.7 | 41.3 | 44.6 | 1.85 | 1.40 | 1.91 | ${ }^{83} 11.22$ | 57.65 | 81.41 105.86 |
| Paper products., ......... | 42.7 | 39.8 | 42.4 | 2.61 | 1.46 | 2.50 | 111.17 | 58.00 | 105.86 |
| Printivg, publishing and allied industries. | 39.7 | 37.0 | 39.1 | 2.89 | 1.52 | 2.61 | 114.88 | 56.42 | 101.95 |
| Iron and steel products., | 42.5 | 38.9 | 42.3 | 2.49 | 1.63 | 2.45 | 105.80 | 63.43 | 103.83 |
| Transportation equipment... | 43.3 | 39.7 | 43.1 | 2.64 | 1.81 | 2.59 | 114.12 | 71.71 | 111.57 |
| Non-ferrous metal products. Flectrical apparatus and supplies | 42.0 | 40.0 | 41.8 | 2.47 | 1.35 | 2.39 | 103.58 | 53.80 | 99.79 |
|  | 42.9 | 39.5 | 41.7 | 2.37 | 1.68 | 2.14 | 101.58 | 68.29 | 89.22 |
| Non-metallic mineral products. | 45.5 | 38.9 | 45.0 | 2.28 | 1.69 | 2.24 | 103.81 | 65.89 | 100.84 |
| Producta of petroleum and coal. <br> Chemical products | 42.3 | 85.7 | 42.3 | 2.08 | 1.96 | 2.97 | 125.97 | 69.91 | 125.43 |
|  | 42.2 | 38.7 | 41.6 | 2.46 | 1.49 | 2.30 | 103.79 | 57.78 | 95.89 |
| Misgellareous manufacturing industries. | 43.4 | 40.1 | 42.0 | 1.94 | 1.29 | 1.69 | 84.26 | 61.87 | 70.80 |
| Totals, Manufacturing | 42.7 | 38.9 | 41.8 | 2.38 | 1.41 | 2.13 | 98.88 | 64.85 | 89.32 |
| Durable goods ${ }^{2}$ <br> NoD-durable goodsi | 42.8 42.5 | 39.7 38.7 | 42.6 41.1 | 2.39 2.24 | 1.63 1.35 | 2.32 1.95 | 102.63 95.15 | 64.49 52.33 | 98.95 80.27 |
| Prorince |  |  |  |  |  |  |  |  |  |
| Newfoundland.............Nova Scotia............ | 40.4 | 39.8 | 40.3 | 1.84 | 0.80 | 1.72 | 74.32 | $3!.98$ | 69.30 |
|  | 42.4 | 38.0 | 41.7 | 1.91 | 0.96 | 1.77 | 80.89 | 36.61 | 73.88 |
| New Brunswick.............. | 43.0 | 37.9 | 42.2 | 1.82 | 1.00 | 1.78 | 82.38 | 37.87 | 75.12 |
|  | 44.2 | 39.1 | 42.8 | 2.09 | 1.34 | 1.89 | 92.27 | 52.25 | 80.92 |
| Ontario........................... | 42.6 | 38.9 | 41.8 | 2.47 | 1.50 | 2.27 | 105, 18 | 58.21 | 94.88 |
|  | 42.2 | 38.7 | 41.2 | 2.10 | 1.26 | 1.88 | 88.48 | 48.88 | 77.64 |
| Saskatchewan | 41.9 | 37.7 | 41.4 | 2.24 | 1.54 | 2.16 | 83.70 | 58.05 | 89.39 |
| Alberts................... | 41.6 | 37.2 | 40.9 | 2.30 | 1.45 | 2.17 | 95.65 | 54.04 | 88.87 |
|  | 39.1 | 37.3 | 38.8 | 2.75 | 1.71 | 2.65 | 107.49 | 63.97 | 103.33 |
| gelected Urban Area |  |  |  |  |  |  |  |  |  |
| Montresl.. ............ | 43.9 | 39.0 | 42.2 | 2.20 | 1.42 | 1.96 | 98.58 | 55.41 | 82. 58 |
| Toronto...................... | 42.7 | 39.6 | 41.8 | 2.43 | 1.47 | 2.15 | 103.74 | 58.16 | 89.82 |
| Hamiltor..................... | 40.7 | 38.7 | 40.4 | 2.69 | 1.54 | 2.54 | 109.62 | 39,74 | 102.52 |
|  | 43.2 | 40.8 | 43.0 | 2.78 | 2.01 | 2.70 | 120.07 | 81.41 | 116.19 |
| Winnipeg.................... | 42.0 | 38.5 | 41.0 | 2.09 | 1.30 | 1.88 | 87.79 | 50.18 | 77.05 |
|  | 39.2 | 36.7 | 38.8 | 2.74 | 1.72 | 2.59 | 107.27 | 62.97 | 100.62 |

${ }^{1}$ The durable gooda group includea wood products, iron and ateel producta, transportation equipment, nonlerrous metal products, electrical apparatus and supplies, and non-metallic mineral producta; the non-durable goods group includes all other manufacturing induatries.

## 18.-Average Weekly Hours and Earnings of Salaried Employees and Earnings of Clerical and Other Salaried Classes

 in Manufacturing, Survey Week 1965Note.-Survey week is the last week of October. Based on the unrevised standard industrial classification.

| Industry, Province and Urban Area | All Salaried Employees |  |  |  |  |  | Clerical and Related Workers |  |  | Other Salaried Employees |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Average Weekly Hours |  |  | Average Weekly Earnings |  |  | Average Weekly Earnings |  |  | Average Weekly Earnings |  |  |
|  | Male | Female | Both Sexes | Male | Female | Both Sexes | Male | Female | Both Sexes | Male | Female | Both Sexes |
| Food and beverages........ | No. | No. | No. | \$ | $\delta^{8}$ | \$ | ${ }^{5}$ | 8 | ${ }^{8}$ | ${ }^{8}$ | 8 | ${ }^{8}$ |
|  | 38.9 | 37.1 | 38.4 | 122.14 | ${ }^{65.78}$ | 106.81 | 95.63 | 64.98 | 78.80 | 132.69 | 76.00 | 130.62 |
| Tobacco and tobacco products | 37.4 39.1 | 37.8 37.9 3 | 37.2 38.8 | 149.35 130.48 | 81.68 69.39 | 123.29 115.69 | 92.67 103.60 | 78.90 68.10 | 83.98 87.45 | 166.61 145.61 | 86.60 89.97 | 148.36 144.02 |
| Leather products. | 39.3 | 37.0 | 38.8 38.5 | ${ }_{113} 13.38$ | 60.54 | $\begin{array}{r}15.62 \\ \\ \hline 0.22\end{array}$ | 95.31 | 59.15 | 84.78 | 123.25 | 71.72 | 119.00 |
| Textile products (except clothing) | 38.5 | 37.2 | 38.1 | 127.35 | 61.37 | 107.12 | 82.99 | 59.85 | 75.73 | 148.12 | 80.64 | 144.80 |
| Clothing (textile and fur). | 39.6 | 37.7 | 38.8 | 117.12 | 65.27 | 94.02 | 94.57 | 61.91 | 72.75 | 127.07 | 76.30 | 116.26 |
| Wood products.. | 40.5 | 37.7 | 39.8 | 127.94 | 64.66 | 112.93 | 101.68 | 63.38 | 84.36 | 142.47 | 87.14 | 141.06 |
| Paper products. | 37.1 | 36.3 | 36.9 | 155.92 | 73.44 | 136.27 | 108.50 | 71.84 | 91.66 | 180.42 | 93.43 | 177.46 |
| Printing, publishing and allied ind | 36.6 | 35.7 | 36.3 | 131.91 | 66.87 | 106.80 | 94.05 | 63.36 | 75.07 | 149.02 | 83.53 | 140.06 |
| Iron and steel products.... | 39.4 | 37.8 | 39.0 | 139.20 | ${ }^{69.35}$ | 123.10 | 105.98 | 68.42 | 90.50 | 162.59 | 96.49 | 161.49 |
| Transportation equipment | 41.8 | 39.8 | 41.4 | ${ }_{1} 151.22$ | 79.66 | 136.50 | 117.51 | 78.80 | 102.53 | 173.37 | 104.61 | 172.40 |
| Non-ferrous metal products. | 38.0 | 37.0 | 37.8 | 146.42 | 71.06 | 130.58 | 106.39 | 69.64 | 89.57 | 162.54 | 85.47 | 160.05 |
| Electrical apparatus and suppliee | 39.6 | 38.3 | 39.3 | ${ }^{142.61}$ | 70.92 | 124.91 | 118.04 | 69.77 | 98.00 | 162.19 | 98.78 | 160.74 |
| Non-metallic mineral products | 39.4 | 37.0 | 38.9 | 132.99 | 67.31 | ${ }_{1} 18.65$ | 101.07 | 67.76 | 87.54 | 150.77 | 64.11 | 146.35 |
| Products of petroleum and coal | 36.1 | 35.7 | 36.0 | 175.22 | 79.76 | 151.10 | 116.00 | 79.74 | 97.81 | 201.96 | 79.98 | 197.71 |
| Chemical products. | 37.7 | 37.4 | 37.6 | 149.47 | 71.67 | 127.03 | 99.56 | 68.80 | 81.49 | 166.89 | 100.10 | 163.71 |
| Miscellaneous manufacturing indus | 38.9 | 37.6 | 38.5 | 135.04 | 68.49 | 114.29 | 104.02 | 67.35 | 81.69 | 146.46 | 82.70 | 143.64 |
| Totals, Manufacturing. | 39.0 | 37.4 | 38.6 | 139.00 | 69.31 | 120.27 | 105.72 | 67.83 | 87.19 | 156.93 | 84.49 | 153.47 |
| Durable goods ${ }^{1}$. | 39.9 | 38.2 | 39.5 | 141.60 | 71.14 | 125.59 | 110.49 | 70.22 | 93.78 | 161.89 | 89.81 | 160.29 |
| Non-durable goods | 38.1 | 36.9 | 37.7 | 136.38 | 68.08 | 115.45 | 99.48 | 66.10 | 80.74 | 152.57 | 83.05 | 147.77 |
| Natince |  |  |  |  |  |  |  |  |  |  |  | 117.28 |
| Nova Scotia. | 39.3 | 36.5 | 38.7 | 114.13 | 53.92 | 99.74 | 86.46 | 53.15 | 71.76 | 130.35 | 63.89 | 128.06 |
| New Brunswi | 39.2 | 38.3 | 39.0 | 121.80 | 54.78 | 104.07 | 85.79 | 54.83 | 70.71 | 139.70 | 54.40 | 134.38 |
| Quebec. | 38.3 | 37.1 | 38.0 | 136.66 | 69.91 | 118.76 | 103.06 | 67.76 | 87.22 | 159.16 | 85.78 | 154.83 |
| Ontario. | 39.2 | 37.5 | 38.8 | 143.18 | 70.85 | 123.13 | 109.90 | 69.44 | 89.09 | 159.81 | 87.06 | 156.61 |
| Manitoba | 39.0 | 37.6 | 38.6 | 116.63 | 57.11 | 100.20 | 89.94 | 56.07 | 72.78 | 129.88 | 65.86 | 126.22 |
| Saskatchewa | 39.2 | 38.4 | 38.9 | 115.88 | 62.46 | 101.45 | 84.05 | 60.91 | 71.42 | 128.11 | 76.56 | 125.62 |
| Alberta. | 39.8 | 38.1 | 39.4 | 126.16 | 62.87 | 111.07 | 99.58 | 61.82 | 80.95 | 136.90 | 71.83 | 134.04 |
| British Columbi | 39.4 | 37.7 | 39.0 | 148.75 | 70.84 | 130.49 | 111.72 | 69.28 | 90.36 | 163.12 | 90.03 | 160.86 |
| Montreal Selected Urban Area |  |  |  |  |  |  |  |  |  |  |  |  |
| Montreal. | 38.0 | 36.9 | 37.7 | 142.93 | 73.44 | 123.31 | 105.34 | 71.34 | 89.18 | ${ }_{162}^{166.68}$ | 90.70 | 161.72 |
| Hamilton. | 394 | 38.0 | 39.1 | 152.18 | 71.72 | 131.02 | 120.97 | 70.94 | 88.46 98.30 | 174.19 | ${ }_{90.58}$ | 172.22 |
| Windsor. | 43.8 | 40.3 | 43.0 | 166.68 | 85.21 | 148.62 | 131.68 | 84.57 | 111.24 | 185.96 | 98.88 | 184.28 |
| Winnipeg | 38.7 | 37.5 | 38.4 | ${ }^{115.73}$ | 57.20 | 99.30 | 89.20 | 56.41 | 72.54 | 129.48 | 67.00 | 125.87 |
| Vancouver | 39.2 | 37.6 | 38.8 | 146.08 | 71.06 | 125.92 | 106.97 | 69.34 | 87.25 | 163.69 | 94.04 | 161.21 |

${ }^{1}$ The durable goods group includes wood products, iron and steel products, transportation equipment, non-ferrous metal products, electrical apparatus and supplies, and non-metallic mineral products; the non-durable goods group includes all other manufacturing industries.

19．－Percentage Distribution of Male and Female Wage－Earners，by Range of Hours Worked，Survey Week 1945

| Range of Hours | Durable Goods |  |  | Non－durable Goods |  |  | All Manufacturing |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Male | Female | Both Seres | Male | Female | Both Sexes | Male | Female | Both |
|  | p．e． | p．c． | p．c． | p．e． | p．e． | p．c． | p．e． | p．c． | p．c． |
| Under 15. | 1.4 | 2.1 | 1.4 | 1.6 | 2.9 | 2.0 | 1.5 | 2.7 | 1.7 |
| 15－20．． | 1.1 | 1.9 | 1.2 | 1.2 | 2.7 | 1.7 | 1.1 | 2.5 | 1.4 |
| 21－24．．． | 1.1 | 2.0 | 1.2 | 1.1 | 2.6 | 1.6 | 1.1 | 2.5 | 1.4 |
| 25－30．． | 1.2 | 2.8 | 1.3 | 1.4 | 5.0 | 2.7 | 1.3 | 4.5 | 2.0 |
| 31－34．．．．． | 3.5 | 6.5 | 8.8 | 3.3 | 7.3 | 4.7 | 3.4 | 7.2 | 4.3 |
| 35－39．．．． | 7.7 | 13.2 | 8.3 | 10.4 | 19.8 | 13.7 | 8.9 | 18.4 | 11.1 |
| 40 ．．．．． | 35.3 | 37.0 | 36.4 | 30.9 | 23.9 | 28.5 | 33.4 | 26.6 | 31.9 |
| 41－43．．．．． | 9.4 | 9.3 | 9.4 | 11.5 | 10.9 | 11.3 | 10.3 | 10.6 | 10.4 |
| 44．． | 4.9 | 4.8 | 4.9 | 5.0 | 4.7 | 4.9 | 5.0 | 4.7 | 4.9 |
|  | 5.0 | 4.6 | 5.0 | 5.1 | 4.7 | 4.9 | 5.0 | 4.6 | 5.0 |
| 48－47． | 4.3 | 3.9 | 4.3 | 5.0 | 4.0 | 4.7 | 4.6 | 4.0 | 4.5 |
| 48．．．． | 7.5 | 3.9 | 7.1 | 6.9 | 3.5 | 5.7 | 7.2 | 3.6 | 6.4 |
| 49－53 | 8.2 | 5.5 | 7.9 | 7.9 | 4.8 | 6.8 | 8.1 | 4.9 | 7.4 |
|  | 1.6 | 0.4 | 1.5 | 1.2 | 0.7 | 1.0 | 1.4 | 0.6 | 1.2 |
| $55-84$ | 6.0 | 1.7 | 5.6 | 5.5 | 2.0 | 4.3 | 5.8 | 2.0 | 4.9 |
| $65+\ldots$ | 1.8 | 0.3 | 1.6 | 2.1 | 0.5 | 1.5 | 1.9 | 0.5 | 1.6 |

24．－Percentage Distribution of Employees in Manufacturing，by Weekly Earnings，
Survey Week 1965
Nore．－－Survey week is the last week of October．

| Range of Earnings | Durable Goods |  |  | Non－durable Goode |  |  | All Manufactaring |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Male | Female | Both Seres | Male | Female | Both Seres | Male | Female | Both Seres |
|  | Whge－Earners |  |  |  |  |  |  |  |  |
|  | p．c． | p．e． | p．c． | p．c． | p．e． | p．c． | p．c． | p．c． | p．c． |
| Under 520 | 1 | 2 | 1 | 1 | 5 | 2 | 1 | 4 | 2 |
| ＋20－829．． | 1 | 3 9 | 1 | 1 | 8 18 | 8 | 2 | 7 16 | 5 |
| 40 －49．． | 2 | 20 | 4 | 4 | 24 | 11 | 3 | 23 | 8 |
| $50-59$. | 5 | 21 | 6 | 7 | 19 | 11 | 6 | 19 | 9 |
| $60-69$. | 7 | 16 | 8 | 10 | 12 | 10 | 8 | 13 | 9 |
| $70-79$. | 11 | 13 | 11 | 12 | 7 | 10 | 12 | 8 | 11 |
| $80-89$. | 15 | 9 | 14 | 15 | 4 | 11 | 15 | 5 | 13 |
| 90－99．． | 17 | 4 | 16 | 13 | 2 | 9 | 15 | 2 | 12 |
| $100-109$. | 13 | 2 | 12 | 11 | 1 | 8 | 12 | 1 | 10 |
| ${ }_{120}^{10}$－ $119 .$. | 10 | 1 | 9 9 | 8 | 二 | ${ }_{8}^{5}$ | 9 | 二 | 7 |
| $140-159$. | 4 | － | 4 | 4 | 二 | 2 | 4 | 二 | 3 |
| $1890-179$. | 2 | － | 2 | 1 | － | 1 | 2 | － | 1 |
| ${ }_{200}^{180}$－ | 1 | － | 1 | 1 | － | － | 1 | － | 1 |
|  | Salaried Enployers |  |  |  |  |  |  |  |  |
|  | p．c． | p．c． | p．c． | p．c． | p．c． | p．c． | p．c． | p．e． | p．c． |
| Under \＄20．． | － | － | － | － | 1 | $\llcorner$ | － | 1 | － |
| － $20-829 .$. | 二 | $\frac{1}{3}$ | 1 | 1 | $\frac{1}{5}$ | $\frac{1}{2}$ | － | 1 | $T$ |
| $40-49$. | 1 | 11 | 3 | 2 | 14 | 6 | 1 | 13 | 4 |
| $50-59$. | 2 | 20 | 6 | 3 | 21 | 9 | 3 | 20 | 8 |
| 60－69．， | 4 | 23 | 8 | 5 | 22 | 10 | 4 | 23 | 9 |
| $70-79$. | 5 | 18 | 8 | ${ }^{8}$ | 16 | 9 | 5 | 17 | 9 |
| ${ }^{80}$－${ }^{89}$ | 8 | 11 | 7 | 8 | 9 | 8 |  | 10 | 8 |
| ${ }_{100}^{90}$－ 109. | 888 | 6 3 | 8 | 10 | 5 3 | 8 | 9 10 | 5 8 | 8 |
| 110－119．． | 10 | 1 | 8 | 9 | 1 | 7 | 9 | 1 | 8 |
| $120-139 .$. <br> 140 <br> 15. | 19 | 1 | 15 | 14 | 1 | 10 | 17 | 1 | 12 |
| $140-159 .$. 160 | 12 | 二 | 9 | 10 | 1 | 7 | 11 | － | 8 |
| 180－199．． | $\stackrel{8}{5}$ | 二 | 6 | 7 4 | － | ${ }_{3}^{5}$ | 7 4 | 二 | 5 3 |
| $200+\ldots$ | 10 | － | 8 | 11 | － |  | 11 | － | 8 |

## Subsection 3.-Estimates of Employment*

Estimates of total employment in establishments in the commercial sector of industry were published for the first time in 1965. Results of a monthly survey of employment in a sample of small firms initiated in 1961 were sdded to data from the long-standing employment and earnings survey to produce estimates of total employment by industrial division.

The estimates of employees are published for those eight major industrial divisions for which monthly and annual data are released in the publication Employment and Average Weekly Wages and Salaries. They are considered, for most purposes, to be more reliable indicators of changes of employment than the larger establishment employment indexes. However, the nature of the new sample survey does not permit the publication of industry detail below industrial division level nor of geographic detail below the provincial level at this time. Further developments in connection with the sample survey are at present taking place.

Surveys of employment in the community service industries have been introduced recently. Education and hospital surveys are becoming well established and it is planned at a later date to extend the estimates to cover fishing and trapping, the entire non-commercial sector of community business and personal service and public administration and defence, thus providing comprehensive data for all non-agricultural industries.

[^238]21.-Estimates of Numbers of Employees, by Industrial Division, 1961-45, and by Month 1965


[^239]
## Subsection 4.-Estimates of Labour Income*

Wages and salaries, as shown in Table 22, include living allowances, bonuses, commissions and "tips" and are measured prior to deductions of all kinds (income tax, employees' contributions to the unemployment insurance fund and to welfare and pension funds, etc.). Both money payments and payments in kind (i.e., free board and lodging) made to, or on behalf of, residents of Canada, excluding military pay and allowances, are included in the total of wages and salaries. Retroactive wage payments are included in the month in which they are paid. Supplementary labour income comprises payments made by employers on behalf of their employees in order to provide them with future benefits, either definite or contingent. Specifically, these payments include employers' contributions to employee welfare and pension funds, to workmen's compensation and industrial vacation funds, and to the unemployment insurance fund. Contributions to Armed Forces pension funds are also included.

* More detailed information is given in DBS monthly pablication Eatimafer of Labour Income (Catalogue No. $72405)$.


## 22.-Wages and Salaries, by Industry, and Supplementary Labour Income, 1961-65, and by Month 1965

Note.-Based on the unrevised standard industrial classification. Figures are unadjusted for seasonal variation.
(Millions of dollara)

| $\begin{aligned} & \text { Year } \\ & \text { sud } \\ & \text { Month } \end{aligned}$ | Agrienlture, <br> Fishing and <br> Trapping | Forestry | Mining | Manufactaring | Conatruction | Transportation, Storage and Communjcation | Public Utilities |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Annual Average- |  |  |  |  |  |  |  |
| 1961................... | 218 | 283 | 542 | 5,306 | 1,252 | 1,862 | 357 |
| 1962.................. | 227 | 300 | 559 | 5,899 | 1,357 | 1,909 | 378 |
| 1963................. | 235 | 308 | 572 | 6,045 | 1,419 | 2,008 | 397 |
| 1964.................. | 244 | 843 | 600 | 6,582 | 1,582 | 2,129 | 421 |
| 1965.. | 252 | 378 | 678 | 7,262 | 1,962 | 2,316 | 455 |
| 1965- |  |  |  |  |  |  |  |
| January.............. | 12.6 | 25.6 | 62.4 | 566.1 | 123.9 | 181.9 | 35.9 |
| February. | 13.2 | 28.7 | 53.3 | 564.4 | 122.2 | 180.4 | 85.9 |
| Maroh. | 14.3 | 25.2 | 54.2 | 583.2 | 128.2 | 178.7 | 35.8 |
| April................. | 18.8 | 21.4 | 53.1 | 587.3 | 136.3 | 185.1 | 36.4 |
| May................. | 21.8 | 27.5 | 55.9 | 600.0 | 156.8 | 191.7 | 37.5 |
| June.. | 26.1 | 34.4 | 58.0 | 614.2 | 169.1 | 192.1 | 38.8 |
| July.................. | 31.0 | 37.6 | 58.3 | 601.2 | 185.2 | 199.8 | 39.4 |
| August................ | 33.2 | 36.3 | 58.3 | 614.2 | 193.8 | 199.0 | 40.0 |
| September.......... | 27.7 | 38.0 | 57.4 | 626.4 | 196.7 | 208.9 | 39.1 |
| October. | 21.9 | 37.8 | 58.9 | 636.3 | 201.1 | 202.1 | 39.2 |
| November........... | 17.5 | 37.6 | 59.4 | 639.0 | 187.9 | 201.9 | 38.7 |
| December........... | 16.0 | 29.4 | 59.0 | 630.0 | 161.5 | 195.0 | 38.5 |

22.-Wages and Salarles, by Industry, and Supplementary Labour Yncome, 1961-65, and by Month 1995-concluded

| $\begin{aligned} & \text { Year } \\ & \text { Mond } \\ & \text { Month } \end{aligned}$ | Trade | Finance. <br> Insurance Real Estate | Service | Government military | Totsl Wages Salaries | Supplemencary Income | Total Labour Income |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Annual Averate- |  |  |  |  |  |  |  |
| 1961. | 2,740 | 883 | 3,050 | 1,723 | 18,176 | 820 | 18,996 |
| 1962. | 2,881 | 889 | 3,363 | 1,828 | 19,390 | 843 | 20,233 |
| 1963. | 3,089 | 955 | 3,697 | 1,949 | 20,674 | 873 | 21,547 |
| 1964. | 3,358 | 1,048 | 1,137 | 2,065 | 22,507 | 926 | 23,433 |
| 1965. | 3,714 | 1,134 | 1,690 | 2,220 | 25,081 | 975 | 26,036 |
| 1565- |  |  |  |  |  |  |  |
| January. | 288.0 | 91.1 | 367.2 | 168.8 | 1,913.5 | 78.2 | 1,991.7 |
| February | 288.7 | 91.8 | 373.0 | 170.4 | 1,920.0 | 78.5 | 1,998.5 |
| March. | 292.3 | 82.4 | 378.0 | 174.4 | 1,956.7 | 79.0 | 2,035.7 |
| April. | 299.2 | 93.0 | 385.6 | 177.5 | 1,991.7 | 79.6 | 2,071.3 |
| May...... | 305.5 | 93.6 | 395.2 | 180.6 | 2,065.9 | 80.7 | 2,146.6 |
| June... | 312.0 | 94.2 | 403.1 | 188.9 | 2,130.9 | 81.6 | 2,212.5 |
| July ..... | 310.3 | 94.8 | 366.7 | 193.9 | 2.118 .2 | 81.5 | 2,199.7 |
| August. | 312.2 | 95.4 | 372.4 | 198.9 | 2,153.2 | 82.1 | 2,235.3 |
| September. | 317.4 | 96.0 | 410.6 | 204.8 | 2,223.0 | 83.3 | 2,306.3 |
| October.... | 322.9 | 96.6 | 411.7 | 189.5 | 2,218.0 | 83.5 | 2,30t.5 |
| November.. | 330.1 | 97.2 | $4 \mathrm{t2.8}$ | 186.7 | 2,208.8 | 83.5 | 2,292.3 |
| December | 335.4 | 97.8 | 413.4 | 185.9 | 2,161.9 | 83.1 | 2,245.0 |

## Section 4.-Wage Rates, Hours of Labour and Other Working Conditions

Statistics on occupational wage rates by industry and locality, with standard weekly hours of labour, are compiled by the federal Department of Labour and published in the annual report Wage Rates, Salaries and Hours of Labour The statistics are based on an annual survey covering some 30,000 establishments in most industries and apply to the last normal pay period preceding Oct. l. Average wage rates of time workers and average straight-time earnings of piece workers and other incentive workers for selected occupations are shown separately in the report but are combined in the calculation of industry index numbers shown in Table 23. Predominant ranges of rates for each occupation used are also given; overtime pay is excluded.

The index numbers of Table 23 measure changes in wage rates for non-office employees below the rank of foreman. They do not, however, provide a basis for comparing the level of wages in one industry with that in another. Information on concepts and methods of developing these statistics is given in the annual report.

## 23.-Index Numbers of Average Wage Rates for Certain Main Industrial Groups, 1356-65 (1949-100)

Norz.-Inderea back to 1901 may be obtained from the Department of Labour publication Wage Rates, Solaries and Hours of Labour 1962.

| Year | Logging | $\begin{array}{\|c} \text { Coal } \\ \text { Mining } \end{array}$ | Metal Mining | Manufacturing |  |  | Construc tion | RailWays | Teiephone | $\begin{gathered} \text { Per- } \\ \text { sonal } \\ \text { Service } \end{gathered}$ | General Average |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Durable Goods | Non- durable Goods | All Manu-iscturing |  |  |  |  |  |
| 1956 | 160.8 | 123.8 | 150.8 | 151.2 | 148.3 | 149.8 | 150.7 | 148.8 | 157.6 | 136.1 | 148.7 |
| 1957 | 168.4 | 137.4 | 158.2 | 160.7 | 130.3 | 158.6 | 160.7 | 153.3 | 185.9 | 138.9 | 158.5 |
| 1958. | 172.0 | 147.6 | 160.8 | 166.1 | 162.2 | 164.2 | 171.0 | 153.3 | 175.4 | 143.5 | 162.5 |
| 1959. | 376.2 | 147.3 | 164.3 | 170.8 | 167.0 | 168.9 | 180.7 | 165.7 | 175.3 | 148.1 | 168.8 |
| 1960. | 184.3 | 148.2 | 169.4 | 176.6 | 173.2 | 175.0 | 192.6 | 166.4 | 178.0 | 156.8 | 175.5 |
| 1961 | 190.8 | 154.5 | 173.9 | 180.3 | 178.7 | 179.5 | 196.3 | 176.5 | 188.0 | 158.8 | 180.0 |
| 1962 | 199.4 | 161.1 | 177.2 | 184.7 | 184.3 | 184.5 | 206.2 | 180.5 | 195.3 | 162.2 | 185.9 |
| 1983 | 208.2 | 155.6 | 192.3 | 190.6 | 190.4 | 190.5 | 214.1 | 185.9 | 200.2 | 171.1 | 192.5 |
| 1964. | 219.6 | 157.4 | 188.0 | 197.6 | 196.8 | 197.2 | 223.6 | 193.8 | 206.5 | 182.2 | 189.8 |
| 1965. | 239.0 | 166.7 | 195.0 | 207.8 | 205.0 | 207.0 | 235.2 | 201.3 | 212.3 | 195.4 | 210.1 |

24.-Average Wage and Salary Rates for Selected Oecupations in Certain Citfes Across Canada, Oct. 1, 1865


For footnote, see end of table, p. 764.

## 24.-Average Wage and Salary Rates for Selerted Occupatlons in Certain Cities Across Canada, Oct. 1, 1965-concluded

| Industry and Occupation | Winnipeg. Man. | Regina. Sask. | Saskatonn, Sask. | Calgary, Alta. | $\begin{gathered} \text { Edmon- } \\ \text { ton, } \\ \text { Alta } \end{gathered}$ Alta. | Vancouver, B.C. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\text { per } \mathrm{hr} .$ | per br. | $\text { per } \mathrm{hr} \text {. }$ | $\text { per } \mathrm{hr} .$ | $\text { per } \mathrm{br} .$ | $\stackrel{8}{8}$ |
| Construction (bullding and structures oniy)- |  |  |  |  |  |  |
| Bricklayer and maeon........................... | 3.05 | 2.90 | 2.75 | 3.25 | 3.15 | 3.51 |
| Carpenter and joiner.. | 2.80 | 2.51 | 2.70 | 3.10 | 3.05 | 3.49 |
| Electrician.......... | 3.00 | 2.80 | 2.65 | 3.20 | 3.30 | 3.97 |
| Painter and glazier | 2.50 | 2.20 | 2.29 | 2.50 | 2.50 | 3.36 |
| Plasterer... | 2.90 | 2,80 | 2.70 | 3.00 | 3.20 | 3.85 |
| Plumber and steamf | 3.25 | 2.80 | 2.80 | 3.20 | 3.20 | 3.59 |
| Sheet metal worker | 2.75 | 2.67 | 2.70 | 2.95 | 3.05 | 3.37 |
| Labourer..... | 1.95 2.05 | 1.83 1.85 | 1.79 1.79 | 2.15 2.15 | 2.15 2.15 | 2.67 2.81 |
| Manufacturing and Other Industries-1 |  |  |  |  |  |  |
| General labourer, male........................ | 1.77 | 1.80 | 1.81 | 1.85 | 1.81 | 2.24 |
| Maintenance Tradea- |  |  |  |  |  | 2.88 |
| Electrician | 2.54 | 2.77 | 2.86 | 2.75 | 2.83 | 3.05 |
| Machinist. | 2.51 | 2.67 | 2.71 | 2.66 | 2.78 | 2.84 |
| Mechanic. | 2.38 | 2.47 | 2.49 | 2.54 | 2.50 | 8.87 |
| Millwright | 2.57 | 2.65 | 2.38 | 2.64 | 2.72 | 3.04 |
| Pipefitter. | 2.51 | 2.47 | 2.64 | 2.71 | 2.85 | 2.80 |
| Tool and die maker | 2.33 2.48 | $\underline{-2.54}$ | 2.29 | 2.60 | $\overline{2} .62$ | 2.98 |
|  |  |  |  |  |  |  |
| Truck driver, light and hesvy | 1.72 | 1.80 | 1.00 | 2.03 | 1.94 | 2.55 |
| Trucker, power. | 2.02 | 1.92 | 1.67 | 2.17 | 1.97 | 2.58 |
|  | per wk, | per wk. | per wk, | per wk, | per wk. | per wk. |
| Onice Oceupations, Male- |  |  |  |  |  |  |
| Bookkeeper, senior.............................. | 97 | 104 | 107 | 108 | 114 | 119 |
| Clerk, intermediate. . . . . . . . . . . . . . . . . . . . . . . . | 76 | 76 | 77 | 88 | 86 | 88 |
| Clerk, senior. | 98 | 102 | 97 | 113 | 112 | 117 |
| Order olerk. | 76 | 79 | 74 | 81 | 83 | ${ }^{93}$ |
| Draughtaman, intermediate..................... | 91 | 90 | 83 | ${ }^{99}$ | ${ }_{116}^{96}$ | 114 |
| Draughtsman, senior............................ | 113 | 108 | 108 | 120 | 116 | 136 |
|  |  |  |  |  |  |  |
| Clerk, intermediate. <br> Machine Operator- | Machine Operator- |  |  | 69 |  | 12 |
| Bookkepping...... | 58 | 60 | 59 |  | 60 | 64 |
| Caleulating. | 61 | 62 | 56 | 62 | 60 | 69 |
| Payroll clerk. | 63 | 73 | 67 | 72 | 67 | 73 |
| Secretary, eenior. | 79 | 83 | 75 | 88 | 80 | 85 |
| Stenographer, junior. ............................ | 54 | 60 | 68 | 72 | 58 | 76 |
| Steuographer, senior .......................... | ${ }_{54}^{67}$ | 72 | 68 56 | 72 | 68 56 | ${ }_{63}$ |
|  | 50 | 52 | 52 | 54 | 53 | 55 |
| Typist, sedior. . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 59 | 56 | 59 | 64 | 63 | 68 |

[^240]Table 25 gives summary data on working conditions of plant and office employees in manufacturing industries and all industries for the years 1963-65. The percentages in this table denote the proportions that employees-plant or office-of establishments reporting specifc items bear to the total number of all such employees in all establishments replying to the survey; they are not necessarily the proportions of employees actually covered by the various items. Further details and additional information are given in the annual report Working Conditions in Canadian Industry, compiled and published by the Department of Labour and based on a survey at May 1 each year of some 30,000 reporting units.

## 25.-Summary of Selected Working Conditions of Non-office and Office Employees in Manufacturing and All Industries, 1963-65


25.-Summary of Selected Working Conditions of Non-0ffice and Office Employees in Manufacturing and All Industries, $1963-65$-concluded


Wages of Farm Labour.-The information on farm wages is provided by volunteer farm correspondents located in all provinces except Newfoundland. The rates presented in Table 26 are average wages paid to all farm help regardless of age and skill. Because the rates reported may cover a wide range of skills, of types of work and of ages of hired workers, the value of the resulting data is considered to be an indicator of trends rather than a measure of absolute wage levels. No attempt has been made to have the wage rates reflect such perquisites as separate housing accommodation, fuel, electricity and food which, under some conditions of hiring, are supplied by employers to their hired farm help.

## 26.-Average Daily and Monthly Wages of Male Farm Help as at Jan. 15, May 15 and Aug. 15, 1965-66

Norz.-Figures from 1940 are given in the corresponding tsble of previous Yesr Books beginning with the 1843-44 edition.

| Province and Year | January 15 |  |  |  | May 15 |  |  |  | August 15 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Daily |  | Monthly |  | Daily |  | Montbly |  | Dsily |  | Monthly |  |
|  | With Board | With out Board | Witb Board | With out Board | With Board | With out Board | With Board | Without Board | With Board | With out Board | With Board | Without Board |
|  | 8 | \$ | \% | \% | \$ | \% | \$ | \$ | \& | \$ | ¢ | \$ |
| Maritime Propinces- |  |  |  |  |  |  |  |  |  |  |  |  |
| 1965....... | 5.50 6.00 | 6.90 7.70 | 121.00 129.00 | 156.00 185.00 | 5.60 6.60 | 7.10 7.80 | 120.00 129.00 | 152.00 179.00 | 5.90 6.20 | 7.40 8.00 | 118.00 129.00 | 149.00 168.00 |
|  | 6.60 | 8.50 | 128.00 | 174.00 | 6.70 | 8.50 | 131.00 | 171.00 | 6.90 | 8.90 | 132.00 | 183.00 |
|  | 7.00 | 8.90 | 135.00 | 181.00 | 7.20 | 8.80 | 144.00 | 186.00 | 7.50 | 9.80 | 138.00 | 191.00 |
| $\begin{gathered} \text { Ontario-- } \\ 1965 \ldots . . . \end{gathered}$ |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 6.90 7.60 | 8.70 8.70 | 137.00 170.00 | 185.00 218.00 | 7.50 8.10 | 9.10 9.90 | 148.00 182.00 | 195.00 236.00 | 8.00 8.40 | 10.00 10.80 | 153.00 171.00 | 216.00 239.00 |
|  | 8.80 | 8.50 | 123.00 | 170.00 | 7.20 | 9.20 | 155.00 | 194.00 | 8.00 | 10.20 | 183.00 | 203.00 |
|  | 7.30 | 9.20 | 138.00 | 185.00 | 8.20 | 10.20 | 176.00 | 218.00 | 8.40 | 10.60 | 182.00 | 232.00 |
| Saskatchewan-$1965 \ldots \ldots \ldots \ldots \ldots .$.$1966 \ldots \ldots \ldots \ldots . .$. | 6.80 | 8.50 | 127.00 | 168.00 | 8.00 | 10.00 | 171.00 | 212.00 | 9.00 | 10.70 | 190.00 | 218.00 |
|  | 7.60 | 9.70 | 144.00 | 188.00 | 9.00 | 11.20 | 200.00 | 238.00 | 9.50 | 11.30 | 199.00 | 243.00 |
| $\begin{gathered} \text { Alherta- } \\ 1965 . \ldots . \\ 1966 \ldots \ldots . \end{gathered}$ | 5.90 | 8.80 | 143.00 | 190.00 | 7.80 | 9.90 | 170.00 | 216.00 | 8.10 | 10.40 | 175.00 | 220.00 |
|  | 7.80 | 9.90 | 160.00 | 211.00 | 9.09 | 11.20 | 190.00 | 248.00 | 9.00 | 11.30 | 189.00 | 241.00 |
|  | 8.00 | 10.20 | 160.00 | 233.00 | 8.40 | 10.60 | 175.00 | 242.00 | 8.80 | 10.80 | 185.00 | 256.00 |
|  | 8.80 | 10.50 | 172.00 | 249.00 | 9.80 | 11.50 | 195.00 | 275.00 | 9.00 | 11.60 | 195.00 | 267.00 |
| Totals- |  |  |  |  |  |  |  |  |  |  |  |  |
| 1965 | 6.40 | 8.24 | 135.44 | 183.04 | 7.08 | 8.84 | 154.00 | 198.40 | 7.60 | 9.64 | 159.90 | 208.06 |
| 1968 | 7.60 | \$.00 | 150.00 | 198.00 | 7.80 | 9.50 | 174.00 | 221.00 | 8.10 | 10.40 | 175.00 | 229.00 |

## Section 5.-Unemployment Insurance

Unemployment Insurance.*-During the depression of the 1930 s the need for a nation-wide unemployment insurance program became recognized. In 1935 the Employment and Social Insurance Act was passed by the Federal Parliament but was subsequently declared invalid by the Privy Council. Later, by consent of the provinces, an amendment to the British North America Act was obtained empowering the Federal Parliament to

[^241]legislate on unemployment insurance and in 1940 the Unemployment Insurance Act was passed, making provision for a compulsory contributory unemployment insurance program at the national level and also for the establishment of a national employment service to operate in conjunction with and ancillary to the unemployment insurance operations. The Act came into effect on July 1, 1941; amended on several occasions, it was replaced by a new Unemployment Insurance Act, effective Oct. 2, 1955.* On Apr. 1, 1965, the operation of the National Employment Service was transferred to the Department of Labour and on Jan. 1, 1966 to the Department of Manpower and Immigration (aee pp. 731-732).

Legislation provides for a compulsory insurance program administered by the Federal Government, and requires employers to join with their insurable employees and the Government in building up a fund. This fund is held in trust by the Unemployment Insurance Commission for the payment of benefit to eligible unemployed persons. The Act is administered by a Commission of three persons appointed by the Governor in Council, of whom one is the Chief Commissioner; one Commissioner, other than the Chief Commissioner, is appointed after consultation with employer organizations and the other after consultation with employee organizations.

The Unemployment Insurance Act applies to all persons employed under a contract of service, $\dagger$ except: the Canadian Armed Forces; the permanent public service of the Federal Government; provincial government employees except where insured with the concurrence of the government of the province; certified permanent employees of municipal or public authorities; hunting and trapping; private domestic service; private-duty nursing; teaching; workers on other than an hourly, daily or piece rate earning more than $\$ 5,460$ a year effective Sept. 27, 1959, unless they elect to continue as insured persons; employees in a charitable institution or in a hospital not carried on for purpose of gain except where the institution or hospital consents to insure certain groups or classes of persons with the concurrence of the Commission. All persons paid by the hour, day, or at a piece rate (including a mileage rate) are insured regardless of amount of earnings.

The amount of the employee contribution is determined by the employee's weekly earnings; an equal contribution is required from the employer. The Federal Government contributes one fifth of the aggregate employer-employee contribution and defrays administrative expenses. Contributions became payable on July 1, 1941. Benefit became payable on Jan. 27, 1942 and by Mar. 31, 1966 a total of $\$ 5,107,000,000 \mathrm{had}$ been paid.

The following statement shows the current weekly rates of contribution and benefit effective Sept. 27, 1959. The weekly contribution is based on actual earnings in the week, irrespective of the number of days worked. The benefit rates are calculated on the average weekly contributions for the last 30 weeks in the 104 weeks preceding claim. In order to qualify for regular benefit, a claimant must have at least 30 weekly contributions in the last 104 weeks prior to claim, eight weekly contributions since the start of the last preceding regular benefit period or in the last year prior to claim, whichever is the shorter period, and 24 weekly contributions since the start of the last preceding benefit period, or in the year prior to the claim, whichever is the longer period.

[^242]WEEKLY RATES OF CONTRIBUTION AND BENEFIT UNDER TEE UNEMPLOYMENT INSURANCE ACT, IN EFFECT FROM SEPT. 27, 1959
Nors.-Weekly rates in effect from Oct. 2, 1955 to Sept. 26, 1959 are given in the 1962 Year Book, p. 738.


## ${ }^{1}$ A hall stamp.

The Act contains a special provision whereby the regular contribution requirements are relaxed somewhat during a $5 \frac{1}{3}$-month period commencing with the first week of December each year. Under this provision, claimants unable to fulfil the contribution requirementa for regular benefit may draw "seasonal benefit" if they have at least 15 contribution weeks during the fiscal year or, failing this, if they terminated regular benefit since the previous mid-May.

Statistics on the Operation of the Act. -In order to assess the impact of changing economic conditions on the insurance program, provision is made for collection of current operational data, such as claims filed and processed and payments made. This information is published monthly in the Statistical Report on the Operation of the Unemployment Insurance Act (Catalogue No. 73-001). Current claims and payment data are useful for administrative purposes and are also a source of information to the public regarding financial and other aspects of the program.

Pergons wishing to draw benefit must file either an initial or a renewal claim. Where it is necessary to compute entitlement to benefit, an initial claim is taken, otherwise a renewal. In the main, initial and renewal claims combined are an approximation of recorded separations from employment during a month. However, if a claimant exhausts his benefit and wishes to be reconsidered for further benefit, an initial claim is required. Such claims, accounting for approximately 15 p.c. of the monthly volume in 1965 , are not new cases of disemployment. The count of claimants at the month-end indicates the extent to which claimants maintain contact with local offees of the Commission.
27.-Amount Paid, 1956-65, and Claims Filed, Claimants and Amount Paid, by Month, 1965

| Year | $\begin{gathered} \text { Amount } \\ \text { Paid } \end{gathered}$ | Month | Initial and Renewal Claims Filed | $\begin{aligned} & \text { Claimants } \\ & \text { at } \\ & \text { Month-End } \end{aligned}$ | Amount Paid |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$000 | 1965 | '000 | '000 | \$ ${ }^{\text {+000 }}$ |
| 1956. | 210,330 | January ....... | 230 | 548 | 39.8 |
| 1957... | 305.076 | February ...... | 160 | 559 | 45.3 |
| 1958. | 492,901 | March..... | 183 | 539 | 85.6 |
| 19680..... | 406,097 481,836 | April...... | 151 | 463 | 43.3 |
| 190.... | 481,836 | June... | 72 | 181 | 18.2 |
| 1881. | 493,971 | July... | 86 | 184 | 11.8 |
| 1962. | 409,208 | August...... | 84 | 172 | 12.8 |
| 1983.. | 394,163 | September. | 72 | 157 | 11.5 |
| 1964. | 344, 390 | October.... | 83 | 170 | 10.2 |
| 1985... | 312,110 | November.... | 152 262 | 245 418 | 12.6 21.2 |

In addition to the monthly data published on the operation of the Unemployment Insurance Act, annual tabulations are compiled regarding persons employed in insurable employment and benefit periods established and terminated. These data are published in the annual report Benefit Periods Established and Terminated under the Unemployment Insurance Act (Catalogue No. 73-201). Data on persons insured under the Act are obtained from a 10 -p.c. sample of insurance books and contribution cards renewed at June 1 each year. Included are persons engaged in insurable employment as well as persons on claim at that date.

## 28.-Persons Insured under the Unemployment Insurance Act, by Industrial Group and Sex, 1964 and 1965

Notz-Based on a 10-p.c. sample of contributors and claimants at June 1.

| Industry | 1984 |  | 1965 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Males | Females | Males | Females |
|  | No. | No. | No. | No. |
| Acricalture., | 11,840 | 1,930 | 9.430 | 1,770 |
| Forestry (mainly logzing). | 80, 820 | 1,880 | ${ }^{73,270}$ | 2,270 |
| Fighing nd trapping.... | 27.610 100 | ${ }_{4}^{260}$ | 21,380 | ${ }_{4}^{150}$ |
| Mines (including miling), quarries, oil wellis............... | 1,055,290 | 376,710 | 1,145,930 | 390\% 870 |
| Construction.. | 320,890 | 9,370 | 1,325,700 | 9,680 |
| Transportation, communication and other utilities.... | 352,260 | 70,770 | 387.070 | 70,520 |
| Trade. | 471,000 | 289,690 | 467,920 | 300,670 |
| Finance, insurance, real estate. | 81,830 | 120,950 | ${ }^{69,290}$ | 124,560 |
| Community, businesa and peraonal service | 222,610 | 266,330 | 224,790 | 285,400 |
| Public administration and defence. | 135,260 | 32,880 | 125,480 | 31,720 |
| Industry unspecified or undefined.. | 102,440 | 53,290 | 89,330 | 34,330 |
| Totak, All Industries. | 2,941,364 | 1,288,480 | 8,021,000 | 1,235,554 |

Benefit.-The duration of regular benefit is related to the contribution history-one week's benefit for every two weeks' contributions in the past 104 weeks with a maximum of 52 weeks. However, contributions more than one year old cannot be used if they have already been taken into account in computing previous rights. Disqualifications for benefit include: loss of work owing to a labour dispute in which the contributor is participating or directly interested; unwillingness to accept suitable employment; being an inmate of any prison or any institution supported out of public funds; refusal to attend a course of instruction or training if directed to do so; residence outside Canada unleas
otherwise prescribed. Disqualification of a claimant for a period not exceeding six weeks may be imposed if an employee is discharged by reason of bis own misconduct or leaves the employment voluntarily without just cause or refuses suitable employment.*

Table 29 distributes regular benefit periods terminated by province and shows average weeks and average dollar benefit paid on these terminations. A claimant establishes a regilat benefit period when he submits his claim in the prescribed manner and proves he has fulfilled the minimum contribution requirements. The duration of benefit and the weekly rate authorized, comprising total entitlement, are then calculated and the claimant's benefit may be drawn upon during successive intervals of unemployment. His benefit period terminates either when he has exhausted the amount authorized or when 12 months have elapsed since he established, whichever comes first.

[^243]Note.-Based on a 20-p.c. sample.

| Province | 1964 |  |  | 1965 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Benefit Periods Terminated | Average Weeks <br> Paid on <br> Termi- <br> nation | Average <br> Amount <br> Paid on <br> Termi- <br> nation | Benefit Periods Terminated | Average Weeks <br> Paid on <br> Termi- <br> nation | Average Amount Paid on Termination |
|  | No. | No. | \$ | No. | No. | \$ |
| Newfoundland. | 21,835 | 14.4 | 380 | 20.500 | 15.1 | 393 |
| Prince Edward Island | 3,770 | 14.9 | 327 | 4,000 | 14.5 | 337 |
| Nova Scotia. | 35,010 | 13.6 | 323 | 32,305 | 13.2 | 321 |
| New Brungwick | 31,090 | 13.6 | 325 | 30,320 | 14.0 | 345 |
| Quebec. | 253, 340 | 12.6 | 323 | 221, 730 | 12.8 | 333 |
| Ontario. | 277,595 | 11.1 | 282 | 229,940 | 12.1 | 305 |
| Manitoba. | 32.815 | 13.0 | 325 | 25,105 | 14.2 | 358 |
| Saskatchewan. | 21,980 | 12.9 | 327 | 18,960 | 14.4 | 369 |
| Alberta. | 48,955 | 11.7 | 306 | 33,775 | 12.5 | 324 |
| British Columbia. | 88,080 | 11.8 | 309 | 80,100 | 11.7 | 310 |
| Tetals. | 812,470 | 12.1 | 308 | 694,735 | 12.7 | 324 |

Table 30 gives provincial distributions of seasonal benefit periods in 1964 and 1965, average weeks and average benefit paid.

## 36.-Seasonal Benefit Periods, Duration of Beneflt and Amount Paid, by Province, 1964 and 1965

Nors.-Based on a 10 p.p.c. sample.

| Province | 1964 |  |  | 1965 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Benefit Periods | Average Weeks Paid | $\begin{aligned} & \text { Average } \\ & \text { Avount } \\ & \text { Paid } \end{aligned}$ | Beneft Periods | Average Weeks Paid | $\begin{aligned} & \text { Average } \\ & \text { Amount } \\ & \text { Paid } \end{aligned}$ |
|  | No. | No. | \$ | No. | No. | \$ |
| Newfoundland. ...... | 27,810 | 13.0 | 310 | 26,210 | 12.8 | 306 |
| Prince Edward Ialand. | 5,310 | 12.4 | 276 | 5,065 | 12.8 | 304 |
| Nova Scotia, | 22, 360 | 11.1 | 261 | 21,025 | 10.9 | 258 |
| New Bronswick | 24,740 96,345 | 11.2 9.4 | ${ }_{227}^{255}$ | 24,325 84,190 | 11.0 | 259 223 |
| Ontario | 74,050 | 9.0 | 210 | 87,000 | 8.9 | 208 |
| Manitoba. | 12,880 | 9.2 | 225 | 11,590 | 9.1 | 222 |
| Saskatchewan. | 9.670 | 9.0 | 217 | 9,430 | 9.0 | 218 |
| Alberta. | 14,240 | 8.4 | 210 | 12,425 | 8.3 | 205 |
| British Colnmbia. | 29,870 | 9.7 | 250 | 28,560 | 9.3 | 245 |
| Totals | 317,075 | 5.9 | 237 | 269,820 | 9.7 | 235 |

## Section 6.-Employment Injuries and Workmen's Compensation

Fatal Employment Injuries.-Data on fatal employment injuries, compiled by the federal Department of Labour, are obtained from provincial Workmen's Compensation Boards, from the Board of Transport Cormmissioners and other government authorities, and from press reports. Of the 1,263 fatal injuries to industrial workers that occurred during 1965, 332 were the result of the victims being struck by objects- 73 by landslides or cave-ins, 56 by falling trees or limbs, 29 by materials falling from stockpiles or loads, and the remainder by other objects. Collisions, derailments, wrecks, etc., were responsible for 276 fatalities, falls and slips for 244, and 121 fatalities were included in the classification "caught in, on or between objects, vehicles, etc." There were 92 deaths caused by inhalation, absorption, ingestion and industrial diseases, 86 by conflagration, temperature extremes, explosions, 60 by contact with electric current, five by over-exertion, strain, etc., and nine by striking against or stepping on objects. The remainder were the result of miscellaneous accidents.
31.-Fatal Employment Injuries, by Industry, 1962-65

| Industry | Numbers |  |  |  | Percentages of Total |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1962 | 1963 | 1964 | 1965p | 1962 | 1963 | 1984 | 1965s |
| Agricultare. | 62 | 49 | 72 | 50 | 5.5 | 4.0 | 5.4 | 4.0 |
| Forestry. | 127 | 322 | 155 | 105 | 11.2 | 9.9 | 11.7 | 8.3 |
| Fisbing and trapping | 12 | 34 | 37 | 40 | 1.0 | 2.8 | 2.8 | 3.1 |
| Mining, quarrying and oil wells | 151 | 163 | 161 | 164 | 13.3 | 13.2 | 12.2 | 13.0 |
| Manufacturing.............................. | 216 | ${ }_{234}^{222}$ | ${ }_{25}^{235}$ | 213 | 19.0 | 18.0 | 17.8 | 18.9 |
| Construction,............................ | 204 | 234 | 252 | 263 | 18.0 | 18.0 | 19.1 | 20.8 |
| utilities................................... | 209 | 210 | 237 | 279 | 18.4 | 17.0 | 18.0 | 22.1 |
| Trade.. | 58 | 61 | 62 |  | 5.1 | 4.9 | 4.7 | 5.1 |
| Finance, insurance and real eatat | 2 | 1 | 2 | 3 | 0.2 | 0.1 | 0.2 | 0.2 |
| Service..................... | 16 | 28 | 55 | 35 | 1.4 | 2.3 | 4.2 | 2.8 |
| Public administration. | 78 | 109 | 52 | 47 | 6.9 | 8.8 | 3.9 | 3.7 |
| Totals. | 1,135 | 1,233 | 1,320 | 1,263 | 100.0 | 100.* | 180.0 | 10.0 |

Workmen's Compensation.*-In all provinces legislation is in force providing for payment of compensation to workmen who are injured by accident arising out of and in the course of their employment or who are disabled as a result of a specified industrial disease. To be entitled to benefits, a workman must be employed in an industry covered by the Act at the time of the injury. Compensation is not payable, however, where the disability lasts less than a stated number of days (varying from one to four in the provincial Acts), or if the injury is due to the workman's own misconduct. A workman who is entitled to compensation has no right of action against his employer for injury sustained during employment.

The Acts provide for a compulsory system of collective liability on the part of employers. Industries covered are divided into classes or groups, according to hazard. Employers are required to contribute to the Accident Fund at a rate fixed in accordance with the accident experience of the class or group. Each class is liable for the costs of all accidents occurring in that class.

The laws apply to enumerated employments but the range of industries covered by each Act is very wide. The principal exceptions are farm workers (who are not covered except in Ontario), domestic servants, casual workers, employees of financial, insurance and professional undertakings, employees of non-profit religious or charitable organizations, and workers in certain service industries in most provinces, for example, barber shops and

[^244]beauty parlours. Small undertakings, i.e., those with fewer than a specified number of employees, are exempted from the Act in some provinces. Excluded employments may generally be brought under the Act on the voluntary application of the employer.

Benefits for disability are based on 75 p.c. of earnings, subject to an annual ceiling. Where disability is permanent, a life pension is paid, irrespective of future earnings. Medical benefits are provided without limitation, regardless of a waiting period, and rehabilitation services are available where necessary. Where death results from an employment injury, fixed monthly payments are made to dependants.

A federal Act provides for compensation for accidents to Federal Government employees according to the scale of benefits provided by the Act of the province in which the employee is usually employed. Seamen who are not under a provincial Workmen's Compensation Act are entitled to compensation under the federal Merchant Seamen Compensation Act.

## 32.-Employment Injuries Reported and Compensation Paid by Workmen's Compensation Boards, 1964

| Province | Employment Injuries Reported |  |  |  |  | $\underset{\mathrm{Paid}^{2}}{\text { Compensation }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Medical Aid Only ${ }^{1}$ | Temporary Disability | Permanent Disability | Fatal | Total |  |
|  | No. | No. | No. | No. | No. | \$ |
| Newtoundland .1..... | 5,174 | 3,637 | 76 | 13 | 8,900 | 2,130,167 |
| Prince Edward Island | 1,288 | ${ }_{8} 972$ | 11 | ${ }^{3}$ | 2,274 | 392.906 |
|  | 12,866 | 8,478 | 303 | 83 | 21,680 | 5,428,485 |
| Newt Brunswick | 11.113 | 9,967 | 189 | 36 | 21,605 | 4, 105,259 |
| Quebec. |  |  |  | 313 | 143.969 | 32,848, $610{ }^{3}$ |
| Ontario. | 205, 053 | 83,884 | 2,999 | 291 | 293,127 | 67,285, 8273 |
| Manitoba.... | 14,364 | 11,042 | 452 | 89 | 25,897 | 9,730,286 |
| Alberta..... | 32.179 | 9, 188 | 183 | 37 113 | 24, 27 | 5,319,266 |
| British Columbis | 49,641 | 24,869 | 1,234 | 155 | 75,899 | 24,211,268 |
| Totals. |  |  |  | 1,053 | 672,691 | 163,522,978 |

[^245]
## Section 7.-Organized Labour in Canada

## HISTORY OF THE LABOUR MOVEMENT IN CANADA*

Cansdian trade union history goes back at least 150 years. There were unions of skilled workera in Saint John, N.B., during the War of 1812, and the ferociously anti-union Nova Scotia Act of 1816 complains that "great numbers of Journeymen and Workmen, in the Town of Halifax, and other parts of the Province have, by unlawful Meetings and Combinations, endeavoured to regulate the rate of wages, and to effectuate illegal purposes" From the prohibitions the Act contains, it is clear that the "Combinations" had been doing almost everything a modern union does in pursuit of collective bargaining, and with some success. There is evidence also of unions of printers in Quebec City in 1827 and 1836, in York (Toronto) and Hamilton in 1833, and somewhere in Nova Scotia (probably Halifax) in 1837; shoemakers in Montreal in the 1830s and in Hamilton between 1827 and 1842; carpenters in Montreal in 1834, and stonecutters in 1844; carpenters, cabinet makers, blacksmiths, foundrymen, hammermen, painters, bakers, shoemakers, tailors and 'horolo-

[^246]gers' in Saint John in 1840; seamen in Quebec City in 1847; shipwrights and caulkers in Kingston in 1848-50; carpenters, cabinet makers, blacksmiths and foundrymen, painters, masons and stonecutters, shipwrights, riggers and sailmakers, longshoremen, sawmill men, millers, bakers, shoemakers, tailors, and printers in Saint John in 1853; longshoremen in Quebec City in 1857, and sailmakers in 1858; moulders in Brantford in 1859; and bakers in Victoria in 1859. Most of these early unions were probably short-lived but the Montreal Stonecutters, the Quebec Sbip Labourers (longshoremen) and the Saint John Shipwrights lasted well into the present century; the present Toronto Typographical Union goes back to $\mathbf{1 8 + 4}$, and the Saint John Longshoremen to 1849 .

Before 1859, all the unions seem to have been purely local, except for the Amalgamated Society of Engineers (ASE), a British union that established its first Canadian branch in Montreal in 1853, a second in Hamilton in 1857, and two more (Toronto and Brantford) in 1858. But from 1859 on, Canadian unionism became steadily more and more 'international', that is, more and more of its members belonged to unions with their headquarters and the bulk of their membership in another country. The ASE was followed, during the 1860 s, by several organizations with headquarters in the United States-the Moulders (1859), the Locomotive Engineers (1864), the Typographical Union (1865), the Knights of St. Crispin (shoemakers) (1868), and the Cigar Makers (1869); the Coopers also may have arrived before 1871. The 1870s brought the Amalgamated Society of Carpenters and Joiners (British) (1871), the Bricklayers and Masons (1872), the Friendly Society of Carpenters (British) (1875), the Locomotive Firemen (1876), and probably the Knights of Labor (1879), and the 1880s brought the Railway Conductors (1881), the American Brotherhood of Carpenters (1882), the Railroad Trainmen (1885), and the Painters and Decorators (1887). British and American immigrants brought some of these with them: others were invited by Canadian Iocal unions that wanted to be part of something bigger and stronger, and whose members wanted to be able to move freely to jobs in the United States when times were hard in Canada.

Nevertheless, during the $1860 \mathrm{~s}, 1870 \mathrm{~s}$ and 1880 s , Canadian workers continued to form purely local or provincial unions. There were provincial organizations of shoemakers in Ontario and coal miners in Nova Scotia; there were local unions of occupations as diverse as seamen, sailmakers, shipwrights, caulkers, riggers, longshoremen, wharf porters, truckmen, hackmen, bricklayers, masons, stonecutters, carpenters, plasterers, painters, plumbers, tinsmiths, boilermakers, carriage makers, saddle makers, harness makers, trunk makers, cabinet makers, chair makers, varnishers and polishers, coopers, boltmakers, brushmakers, bricklayers' labourers, labourers, tailors, hatters, bakers, bookbinders, and in places as widely scattered as Halifax, Charlottetown, Saint John, Quebec, Montreal, Ottawa, Toronto, Hamilton, London, St. Catharines and Victoria.

For many years the various unions, even in the same city or town, had very little to do with each other. But in December 1863 several Hamilton unions formed a central Trades Union or Trades Assembly, a body made up of delegates from the constituent unions, which lasted till at least 1875. This was followed by the Toronto Trades Assembly (1871-78), the Ottawa Trades Council (1872-76) and the St. Catharines Trades Assembly (1875). In 1873, moreover, the Toronto Assembly called a national convention. By that time, there must have been upwards of a hundred unions in the country but the convention had delegates from only 31 locals of 14 unions, all in Ontario (although the Typographical Unions in Montreal and Quebec sent letters of approval). This convention set up the first national central organization, the Canadian Labor Union, which met again in 1874, 1875, 1876 and 1877 The depression of the 1870 s, however, was fatal to both the local and national central bodies, although many of the local unions, especially the branches of the internationals, survived.

Meanwhile, the infant Canadian labour movement had won a resounding and decisive legislative victory in the Toronto printers' strike of 1872, part of the nime-hours movement. Most of the Toronto master-printers, headed by George Brown of the Globe, were fiercely anti-union. They had 13 leading members of the Typographical Union committee arrested on a charge of seditious conspiracy. Labour had assumed unions were lawful but it now
found they were not. British Acts freeing them of their Common Law disabilities did not extend to Canada so that Ontario unions in 1872 were in the same legal position as British unions in 1791. They promptly set to work to get Canadian legislation to match the British. Sir John A. Maedonald, delighted at the opportunity to "dish the Liberals" with two pieces of unimpeachably Gladstonian legislation, lost no time in passing through the Dominion Parliament a Trade Unions Act and a Criminal Law Amendment Act (1872) modelled on the Britigh Acts of the previous year. This was the first big piece of successful political action by Canadian unions. The prosecution was dropped and the strike was won.

With the adoption of the National Policy (1879) and the construction of the Canadian Pacific Railway (1881-85), Canadian industry began to revive and grow and the unions revived and grew with it. The 1880s saw not only the organization of a host of purely local unions, most of them short-lived, but also the entry of several new international unions including, besides those already mentioned, the Order of Railway Telegraphers (1888) and the Plasterers and Cement Masons (1889). The railway running trades organizations (Engineers, Firemen, Conductors and Trainmen), which in 1880 had had only about a dozen locals, by 1890 had about 100 ; in 1880 they had been confined almost wholly to Ontario but by 1890 nearly half their locals were in other provinces, divided almost equally between the Maritimes, Quebec and the West. The building trades also had only about a dozen locals in 1880, again nearly all in Ontario and, by 1890, they had about 60, rather more than half of them in other provinces, more particularly the Weat and Quebec.

But the most spectacular feature of the 1880s was the appearance and growth of the Knights of Labor. Actually, the Knights (which started in the United States but spread to Canada, Britain, Belgium, Australia and New Zealand) had formed one Local Absembly in Canada before 1880 but this had withered on the vine and their Canadian history really began in Hamilton in the fall of 1881 . Within a decade they had organized well over 300 local Assemblies in more than 100 cities, towns and villages in every province except Prince Edward Island and what is now Saskatchewan. Many of these were short-lived, few surviving the turn of the century, but in 1886 there must have been 160 and in 1887 close to 200 .

What is more, the Knights were mainly responsible for the organization of the unskilled, men and women (of which there had previously been very little) and of small town workers. Nor did they neglect the skilled; their first big effort in Canada was organizing 30 Local Assemblies of telegraphers, from Winnipeg to North Sydney, as part of their "National Trade District 45, United Telegraphers of North America" This body, in the summer of 1883, conducted the one genuinely international strike in North American history, against the big telegraph companies on both sides of the border. The strike failed and the Canadian Telegraphers' Assemblies disappeared but the Knights went on to organize almost every conceivable craft, from carpenters to watch-case makers, from stonecutters to musicians. They also organized a great number of "mixed" Assemblies that took in all occupations, skilled and unskilled, and were specially adapted to the needs of small towns where there were not enough workers of any one occupation to make a sizable trade union. The cities and larger towns had their share of Assemblies (in 1887 Toronto had about 50, Montreal over 20, Quebec City perhaps a dozen, Hamilton 15) but there were also single Assemblies, usually mixed, in dozens of small places.

With the fresh burst of organizing activity came a revival of the central organizations, both local and national. Significantly, the new Iocal central bodies almost invariably called themselves "Trades and Labor Councils"; the "trades" were making room for the unskilled. The Toronto Council was formed in 1881 and was followed by Halifax (1882), Hamilton and London (1883), Guelph (1885), Montreal, Oshawa, Brantford and St. Thomas (1886), Winnipeg (1887), and Ottawa, St. Catharines, Peterborough, Vancouver and Victoria (1889). The new national central body, known initially as the "Canadian Labor Congress" but from 1886 on as the Trades and Labor Congress (TLC), was set up in 1883 by a convention summoned by the Toronto Council and for some years was, in fact, an almost wholly Ontario body. The first convention had no delegates from any other prov-
ince; the second, in 1886, had one from Quebec but in 1887 and 1888 the delegates were again all from Ontario. From 1889 on, however, there was always a substantial delegation from Quebec. In 1890, the first western delegates appeared (from British Columbia), and in 1897 the first from the Maritimes (New Brunswick). Until the turn of the century, however, the Congress remained a predominantly Ontario and Quebec organization, not only because most of the unions and the Knights of Labor Assemblies were in those prov* inces, but because the railway running trades almost invariably held aloof, and because unions and Assemblies were usually too poor to send delegates more than a short distance from home.

From 1880 until the beginning of the twentieth century, the Canadian labour movement was comprehensive, inclusive; the Congress was prepared to accept every kind of genuine labour organization there was-craft or industrial, skilled or unskilled, local, regional, national or international. Even 80, its strength was not impressive. In 1901, the Secretary-Treasurer reported that of 871 organizations in the country, only 133, with a total membership of 8,381, had affiliated; and total Congress expenditures in that year were only $\$ 809.88$. It was not until the next year that the Congress engaged "the services of a stenographer and typewriter", which "necessitated the fitting up of a small office with two desks and a chair"

In these circumstances, it might have been supposed that the policy of taking in everybody would have continued. But in 1896, Canadian trade unionism had to face, for the first time, the problem of reconciling continental solidarity with Canadian autonomy. Most of the TLC affiliates were locals of international organizations but it had confined itself almost wholly to legislative activities and seems to have had no formal contact with the American Federation of Labor (AFL). But in 1896, it complained to the AFL about the application of the American Alien Contract Labor Act to Canadian workers and the ensuing correspondence led, in 1899, to an exchange of fraternal delegates which lasted as long as the Congress.

Meanwhile, the Knights of Labor, which in the Iate 1880s and early 1890 s had played a dominant part in the Congress (supplying the majority of the delegates at the conventions of 1887-89, 1891, 1893 and 1894 and holding the Congress presidency from 1886 to 1891, and in 1894 and 1895), had dwindled to very small proportions in Canada and to almost nothing in the United States. The AFL, on the other hand, was becoming more and more powerful and its unions in Canada more and more numerous and influential. With the turn of the century, they felt in a position to put pressure on the Congress to throw out all organizations "dual" to (rivals of) AFL unions and in 1902 the Congress complied. It lost 23 organizations; it kept nearly 200. There were over 1,000 unions in the country-more than 500 in Ontario, about 160 in British Columbia, slightly fewer in Quebec, about 140 in the Maritimes and nearly 70 on the Prairies.

By its action in 1902, the Congress ranged itself definitely on the side of international unionism. It did not, however, by any means accept the subordinate role the AFL repeatedly tried to impose on it. From 1897 on, it kept trying to get the international unions, or the AFL on their behalf, to turn over to the Congress the dues these unions paid the AFL on their Canadian membership. It finally solved this problem by getting the international unions to affiliate their Canadian membership direct, which they began to do in 1906. The AFL persisted, right down to 1955, in chartering local unions in Canada. It also made repeated unsuccessful attempts to deny the TLC the sole right to charter local Trades and Labor Councils, and it took the Congress 35 years (1910 to 1945) to win complete victory. The Federation was successful in forcing the Congress to expel, in 1939, a whole group of unions belonging to the Congress of Industrial Organizations (CIO) but only after a struggle. A similar attempt in 1946 against the Machinists met a firm and spirited refusal. After this, the Congress decided to assert itself by setting up a series of departments and a full-scale organizing staff and otherwise make plain the status it felt it should enjoy as a fully autonomous Canadian trade union centre.

None of these disputes, however, really disturbed the basic harmony between the TLC and the AFI. The Congress, made up overwhelmingly of international unions
whose American members were affliated to the Federation, never faltered in its allegiance to international unionism. It knew that in most industries international unions alone had the staff, experience and money to do the job that had to be done.

Meanwhile, however, the whole Canadian labour movement had been "by schisms rent asunder, by heresies distrest" Nationalism, industrial as against craft unionism, revolutionary ideas, and a mixture of nationalism and denominationalism all played their part. The unions expelled by the TLC in 1902 promptly formed the National Trades and Labour Congress of Canada, which, in 1908, became the Canadian Federation of Labour and in 1910 took in the Provincial Workmen's Association of Nova Seotia (which had never affiliated with the TLC). In 1919, just after the Winnipeg general strike and partly as a result of its failure, many western unionists, attracted by revolutionary industrial unionism, broke away from the Congress and the established international unions and formed the One Big Union, which for a time threatened to take away a large proportion of the TLC's membership on the Prairies and in British Columbia but within a few years had ceased to be of any importance. Between 1901 and 1921, small Roman Catholic unions (some of them perhaps former Knights of Labor Assemblies) sprang up in Quebec under the fostering care of the hierarchy and clergy and in 1921 formed the Canadian and Catholic Confederation of Labour (CCCL). In 1927, the Canadian Federation of Labour and other national unions (notably the Canadian Brotherhood of Railway Employees, which had been founded in 1908, had entered the TLC in 1917 and had been expelled from it in 1921) formed the All-Canadian Congress of Labour (ACCL), dedicated to industrial and national unionism. By 1935, purely Canadian unions of one kind or another, including the Communist Workers' Unity League, made up nearly hali the total union membership in Canada. Within a few years, however, international unionism reasserted its predominance and for many years now about 70 p.c. of all Canadian unionista have belonged to international unions.

The great debate in the United States in the 1930s over the relative merits of industrial and craft unionism found only faint echoes in Canada. The TLC had both kinds and was most reluctant to expel the Canadian branches of CIO unions but, faced with a virtual ultimatum from the AFL that it must either expel the CIO unions or lose the AFL unions (whose Canadian membership was then far larger), it had really no choice and in 1939 the CIO unions were accordingly cast forth. They at once formed a Canadian CIO Committee, which became the fourth Canadian central organization.

Through all these changes and chances, the four railway running trades (Conductors, Engineers, Firemen and Trainmen) remained unaffiliated with any central body, although locals of every one of them had occasionally sent delegates to Trades and Labor Councils and to TLC conventions, and in 1896 their joint Legislative Board had sent two delegates to the TLC, of whom one was elected to the Congress Executive. The "big four", however, co-operated with each other and two Congress railway unions in a Dominion Joint Legislative Committee.

Late in 1939 came the frrst step toward unity, although, paradoxically, it created the first effective opposition to the TLC. The ACCL and the Canadian CIO Committee agreed to unite in the Canadian Congress of Labour (CCL), which was set up in 1940, with complete autonomy not only for itself but for the Canadian branches of CIO unions. Contrary to most expectations, this new Congress not only survived but grew and became strong, organizing mass production industries and pioneering in labour research, workers' education and labour public relations. For the next 15 years both Congresses passed resolutions almost every year in favour of unity and, from 1948 on, joint action on various matters became increasingly common. But as long as the two American central bodies were at loggerheads their Canadian counterparts could make little progress towards reunion because of the provisions of the TLC Constitution which, in effect, forbade it to affiliate any union 'dual' to an AFL union. Once the Americans agreed to discuss unity, this blockage disappeared. By the end of 1953 the two Canadian Congresses had appointed a joint Unity Committee, which first (1954) drew up a "No-raiding Agreement"
(under which unions of the rival organizations agreed not to try to steal each others' members) and in 1955 a "Merger Agreement" After ratification by the two Congress conventions, the Merger Agreement came into force and the founding convention of the united Canadian Labour Congress (CLC) took place in April 1956. In January 1957, the small and respectable remnant of the One Big Union joined the new Congress, the Locomotive Firemen followed in February, and the Trainmen in September.

During the Second World War, the CCCL, at first distrusted and denounced by the orthodox unions as a collection of thinly veiled "company unions", shed the narrow denominationalism and French-Canadian nationalism of its early years and by the 1950s had become one of the most militant labour organizations in the country. After numerous battles with the international unions, it also came to co-operate with them for common ends and for a time, in 1956 and 1957, it looked as if the Confederation would come into the CLC. But the negotiations broke down and it stayed out. In 1960, it formally "de-confessionalized" itself and became the Confederation of National Trade Unions (CNTU).

In 1911, there were only 133,000 union members in Canada, and at the outbreak of the First World War still only 166,000 . By 1919 the number had more than doubled to 378,000 ; by 1924 it had sunk to 261,000 ; and by 1932 it had recovered to 322,000 . The depression cut it back to 281,000 but by 1938 it was slightly higher than in 1919. During the Second World War, the immense new industrial development and the organization of the mass production industries again more than doubled the pre-war figure, and in 1949 membership passed the $1,000,000$-mark. Since then, growth has been slower; the manual workers in the large industries and the main crafts in the cities and big towns have been pretty effectively organized but the white-collar workers and the small town workers in general have not. From 1958 to 1964, total union membership was almost stationary but in 1965 it started to rise again substantially. CLC unions now (1966) have about three quarters of the $1,600,000$ organized workers in Canada; the CNTU has about 10 p.c. (almost all in Quebec) and another 8 p.c. are in international unions unaffiliated with the CLC.

In some respects, Canadian trade unionism has changed out of all recognition since the first Canadian Labor Congress met, over 80 years ago; in others, it has changed very little. The basic aims and basic organization are the same; the change has been chiefly in the legislation the unions want passed. This is partly because so much of what they originally wanted they have long since got-one day's rest in seven, cash payment of wages, bureaus of labour statistics, a Department of Labour, the nine-hour day, workmen's compensation, universal suffrage, free compulsory education; it is partly also because some of the things they once wanted no longer interest them, or even, as with compulsory arbitration (repeatedly demanded down to 1902), have become anathema; but it is also because, on many matters, circumstances, or the general climate of opinion, or both, have changed. This is true of temperance legislation, the single tax, the initiative and referendum, the abolition of Lieutenant-Governorships and the High Commissionership to Britain, the election of the Governor General, demonetization of gold and silver, condemnation of manual training in the schools, transfer of university and college grants to the schools, exclusion of Oriental immigrants and of "pauper" immigrants from Europe. But abolition of the Senate, public ownership of banks and public utilities, minimum wages and shorter hours are all part of the CLC program, as they were of the TLC. So is support for the co-operative movement.

One subject that figured prominently in TLC resolutions from 1886 to 1910 was cooperation with the farmers, who in those days were of course far more powerful, economically and politically, than organized labour. In 1886, the Congress appointed a committee to meet with the Dominion Grange to get some united action on the Factory Act. In 1893, it met with the Grange and the Patrons of Industry (a new farm organization) and adopted a common "platform", set up a standing committee with the Patrons to devise "a scheme for a union of the labor forces (rural and urban)", and provided for a vote by affiliated organizations on allowing the Grange and the Patrons to affiliate. In 1894, the Congress constitution was amended to let the Patrons in; this was deleted in 1895 but in

1896 the convention again resolved that unity with the Patrons was desirable and instructed its Executive to be represented at any meeting the Patrons called. The Dominion election of 1896 pretty well did for the Patrons but the idea of co-operation with farm organizations persisted and in 1910 the Executive recommended appointment of a special committee for this purpose.

From then until 1941, labour seems to have been too preoccupied with more urgent matters to give this one much attention. In that year, the TLC declared that "the wellbeing of labor is inseparably bound up with the prosperity of the farmer"; expressed its fear that "many farmers" would be "driven off the land" and "forced into competition with workers thereby driving down wages"; and announced its "sympathy and support for the farmers to secure adequate debt protection and parity of farm prices" The CCL declared in favour of co-operation with farm organizations and of government aid in marketing farm produce in any friendly country. The next year the TLC called on the Government to help the farmers meet the shortages of machinery and services. In 1946 both Congresses supported the Alberta farmers' strike; the older declared for "close cooperation" with national and provincial farm organizations; the younger suggested a conference of "Labour organizations and the official spokesman of the farmers" to work toward "complete unity in our demands for social security" In 1947 the CCL deelared its support for the farmers "in their attempt to get a fair price for their products", and in 1948 pledged itself to do all it could to promote "farmer-Labour-teacher" cooperation for "common aims and objectives" In 1949 the TLC listened to a speech of greeting from the President of the Abberta Farmers' Union (already affliated with the Calgary Trades and Labor Council). In 1951 the CCL called on the Government to work out with farm organizations "a just farm price-structure" The next year the older Congress had another speech of greetings, this time from the President of the Interprovincial Farm Union Council, and the other Congress declared for a "National Co-ordinating Committee of Farm and Labour organizations" From 1953 to 1955 both Congresses had farm speakers each year; so did the new CLC at its founding convention in 1956. In February 1954 the two Congresses and the Interprovincial Farm Union Council set up the Farmer-Labour Economic Council, which still exists.

Another subject of great importance which has had a place in almost every meeting of the national central organizations is political action. The Canadian Labor Union dealt with it in 1876 and 1877. The Congress of 1883 unanimously resolved that "the working class of this Dominion will never be properly represented in Parliament or receive justice in the legislation of the country until they are represented by men of their own class and opinions" The 1886 convention reaffirmed this and the members pledged themselves to "use their utmost endeavours, wherever practicable, to bring out candidates for the local and Dominion elections" or, where this was not "deemed advisable", to support the candidate "who pledges himself to vote for most planks of the platform of this Congress" The 1887 convention dropped this last part and adopted the remainder unanimously. The 1889 convention set up a committee to consider forming an "independent political party" and recommended the organizations to nominate candidates where practicable and elsewhere to support the party which was prepared to do most for Labour. In 1892, on motion of two French-Canadian delegates, the convention resolved to "take into consideration the advisability of forming a labor party" Perhaps as part of the consideration, the 1893 convention invited its member organizations to answer four questions: (1) Are you in favor of the present industrial system? (2) Are you in favor of the so-called co-operative system of productive (sic) distribution and exchange? (3) Are you in favor of the communistic system of government? (4) Have you any other system better than the above to suggest? (Strange to say, there were almost no replies.) In 1895, by a very narrow majority, the convention voted to admit "sections of the Socialist Labor Party" (this was repealed in 1896) and resolved that "labor organizations should now unite for independent political action"

But some organizations had already been taking political action. In 1874, Ottawa elected the first Labour M.L.A. in Canadian history. In 1883, the Toronto Trades and

Labor Council nominated two provincial candidates and came close to electing one, and the Hamilton Knights of Labor nominated a candidate who made a respectable showing. In 1886, there were provincial Labour candidates in Toronto, Hamilton, London and Montreal. In 1887, Toronto had a Labour candidate for the Dominion House of Commons and, in 1888, the Montreal Central Labor Council and the Knights of Labor actually elected their candidate in a Dominion by-election in Montreal East. Ottawa had a Labour candidate in the Dominion General Election of 1891.

For the most part, however, until 1906 the unions seem to have relied on meetings of the TLC or its provincial committees with Dominion and provincial Ministers, at which Labour presented its legislative proposals: and from the early 1890s, these meetings have been standard practice. However, by 1899 , the Ontario Executive had decided that this was useless and that "the only way to get from the Government what is our right is to elect men in sympathy with the labor cause" In the same year, the Winnipeg Trades and Labor Council and the Winnipeg Labor Party nominated A. W Puttee for the House of Commons; and the Congress, presided over by Ralph Smith, M.L.A. for Nanaimo, B.C., decided to ask its member organizations whether they favoured an independent Labour party and would back its candidates. The vote was 1,424 in favour to 167 against, with only three organizations out of 44 voting "no" The 1900 convention decided this was enough to justify the Congress in "taking such steps as it deemed advisable to further the progress of such action" It also asked the Nanaimo miners to nominate President Smith for the House of Commons. They did and both Smith and Puttee were elected, with another Labour candidate in Manitoba barely defeated. In 1903 a new Congress President, John Flett, was declaring that the meetings with the Dominion Government were useless and that Canadian Labour should follow the British example and elect Labour men to Parliament. In 1904 he reiterated this and for three years the annual interview was dropped and a parliamentary counsel was substituted to look after Congress interests full-time during the session. In 1903, 1904 and 1905 the conventions passed resolutions favouring independent Labour candidates wherever possible. In 1906, Alphonse Verville, President of the Congress, was elected to the House of Commons for Maisonneuve (Montreal) and declared he hoped for "at least a dozen" Labour members in the next Parliament. The convention responded by adopting what became the political action policy of the TLC for the remainder of its life. The Congress was to endorse sending Labour representatives to Parliament and the Legislatures; its provincial Executives were to summon provincial conventions of trade unionists and sympathizers to set up "the necessary associations"; and the Congress was then to step out of the picture, having "recommended" its own Platform of Principles as the platiform for "this independent efiort" The result of this was the foundation of a Canadian Labour Party in Ontario, Quebec, Manitoba, British Columbia and Nova Scotia. Though launched with considerable fanfare, its only substantial success was in Ontario in 1919, when eleven Labour candidates were elected and two Labour Ministers entered the Farmer-Labour coalition. A few surviving sections entered the Co-operative Commonwealth Federation (CCF) in 1932 and 1933, along with the Independent Labour Party of Manitoba, which had elected two members to the House of Commons.

The CCL explicitly endorsed the CCF in 1943 and continued to do so throughout the remainder of its existence. It set up political action committees to implement this policy. Its efforts certainly helped the CCF to win power in Saskatchewan in 1944 and to retain it for 20 years; to maintain its position as the offcial Opposition in British Columbia for most of the past thirty years; to become briefly, although for the second time, the official Opposition in Ontario from 1948 to 1951; to win a few seats in the Nova Scotia Legislature; and to carry some industrial ridings in the House of Commons in the elections of 1945, 1949, 1953 and 1957. But on the whole the results were not what the Congress had hoped.

The CLC at its first convention adopted a compromise policy on political action, leaving its provincial Federations, its local Councils and, of course, its autonomous affiliated unions free to follow whatever line they gaw fit and authorizing its Political Education Committee, under the guidance of the Executive Council, to initiate discussions
with other free trade unions, the principal farm organizations, the co-operative movement, the CCF and "other parties pledged to support the legislative programme" of the Congress, in order "to explore and develop co-ordination of action in the legislative and political field" Nothing much came of this until after the Dominion General Election of 1958, when the Congress invited the same groups to enter discussions looking to the formation of a new political party. The farm organizations and the co-operatives (mainly farmer) declined; the CCF accepted. In 1961, the CLC and the CCF, with a variety of sympathizers organized in "New Party Clubs", founded the New Democratic Party.

The Congress did not itsolf affiliate with the new party (although a number of its unions, with some 200,000 members, did). It remains an independent national trade union centre. The relationship is much the same as that between the British Trades Union Congresa and the British Labour Party. Indeed, it is hardly too much to say that the founding of the New Democratic Party represents the triumph of the British tradition of direct political action, brought to Canada by British working-class immigrants in their baggage, over the non-partisan AFL tradition. It is one of the marks of the independence of the Canadian labour movement from the American, with which it is otherwise, in so many ways, so closely associated.

The CLC is wholly independent of the AFL-CIO, which since 1956 has had no branches, no staff and no jurisdiction in Canada (although this does not apply fully to some of its Trade Departments). The Canadian sections of most intervational unions affiliated with the CLC enjoy complete autonomy. The CNTU and its unions are, of course, purely Canadian and almost entirely French-Canadian, and in the past few years have been engaged in a vigorous competition with the CLC and its affiliates in Quebec. Internationally, the CLC is a member of the International Confederation of Free Trade Unions (ICFTU) and the CNTU of the International Federation of Christian Trade Unions (IFCTU).

In the centennial year 1967, Canadian unions can look back on a record of impressive achievement. A century ago, they were at best barely legal, were few, small, weak and scattered, without even local let alone national central organization, hemmed in by all manner of restrictions, distrusted, despised or hated by most of those in authority, employers and governments alike. Their members worked long hours for meagre wages and under poor conditions. Even Factory Acts had yet to be passed and social security was undreamed of. Now, unions are fully legal, with collective bargaining (long fiercely resisted) legally compulsory. They are many, big and strong; they cover every province, almost every city and town; they have local, provincial and national federations which enable them to speak with one voice to governments. They are important social institutions, accepted even by those who like thern least. They take an active and leading part in all manner of activities, whether governmental or private. They are consulted, listened to, represented on boards and commissions and committees of almost every kind. Their members generally work 40 hours a week or less, for wages that are among the highest in the world, and under reasonably good conditions. And it is largely union effort that has won, not only for union members but for hundreds of thousands of people never even eligible for membership, a substantial measure of social security in unemployment, illness, disability of other adversity. The fathers of Canadian unionism, most of them unknown and unsung, perhaps deserve as well of this generation as the Fathers of Confederation itself.

## Union Membership

Union membership in Canada at the beginving of 1966 totalled $1,736,000$, the highest on record. It amounted to 30.7 p.c. of the $5,658,000$ non-agricultural paid workers in Canada as of January 1966, and 24.5 p.c. of the over-all labour force.
33.-Union Membership in Canada, 1938-66

| Year | Members | Year | Members | Year | Members | Year | Membera |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | '000 |  | '000 |  | '000 |  | '000 |
| 1938. | 382 | 1945.... | 711 | 1953. | 1,220 | 1960.... | 1,459 |
| 1939. | 359 | 1946.. | 832 | 1954. | 1,268 | 1811. | 1,447 |
| 1940. | 362 | 1847. | 918 | 1855. | 1,288 | 1962. | 1,423 |
| 1941. | 462 578 | 1948. | ${ }^{978}$ | ${ }_{1957}^{1956}$ | 1,352 T, 286 | 1963. | 1,449 |
| 1943. | 678 | 199511. | 1.020 | 1958 | 1,454 | 1965. | 1, 1,589 |
| 1844. | 721 | 1852. | 1,146 | 1959 | 1,4593 | 1866 | 1,736 |

[^247]Almost three quarters of all union members in Canada were in organizations affiliated with the Canadian Labour Congress (CLC); in most cases these unions were also affiliated with the American Federation of Labor and Congress of Industrial Organizations (AFLCIO). Another 11 p.c. of the total union membership in 1966 was affiliated with the Confederation of National Trade Unions (CNTU). Unaffiliated international and national unions accounted for 12 p.c. and 3 p.c. was in independent local organizations.

The 1966 union membership in Canada showed a net gain of 9.2 p.e. over 1965 , the highest percentage increase in any year since 1952. Among international unions operating in Canada, the largest increase was reported by the United Automobile, Aerospace and Agricultural Implement Workers of America, with a gain of 19,300 members. The United Steelworkers of America reported an increase of 10,000 and the International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America an increase of 9,800 . The highest relative increases were reported by the International Brotherhood of Boilermakers, Iron Shipbuilders, Blacksmiths, Forgers and Helpers with a gain of 2,400 members or 54 p.c. over 1965, the Retail Clerks International Association with an increase of 4,100 members or 34 p.c. and the Canadian Federation of Public Service Employees (Fédération canadienne des employés du service public) with an increase of 33 p.c. over the 20,000 members reported in 1965 . Total membership of unions affiliated with the CLC was higher by 101,000 than a year earlier; affiliates of the Confederation of National Trade Unions showed an increase of 38,000 , much of the latter being attributable to the affiliation during the year of the Quebec Government Employees Union (Syndicat des fonctionnaires provinciaux du Québec) with the CNTU.

The ten largest unions active in Canada in 1966, listed below in order of size of membership, together accounted for 37 p.c. of total union membership in Canada. All ten registered membership increases over 1965.

| Relative Position in 1966 | Umon and Affliation | $\begin{gathered} \text { Member- } \\ \text { ship } \\ \text { in } 1266 \end{gathered}$ | Relative Position in 1865 |
| :---: | :---: | :---: | :---: |
| 1 | United Steelworkers of Americs (AFL-CIO/CLC) | 120,000 | 1 |
| 2 | Internstional Union, United Automobile, Aerospace and |  |  |
|  | Agricultural Implement Workers of America (AFL-CIO/ | 96,800 |  |
| 3 | Cansdian Union of Public Employees (CLC). | 89,400 | 2 |
| 4 | United Brotherhood of Carpenters and Joiners of America (AFL-CIO/CLC) | 71,700 | 4 |
| 5 | International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America (Ind.) | 52,200 | ${ }_{5}^{6}$ |
| 6 | International Woodworkers of America (AFL-CIO/CLC). | 47,500 | 5 |
| 7 | International Association of Machinists and Aerospsce Wor* kers (AFL-CIO/CLC) | 43,000 | 7 |
| 8 | International Brotherhood of Electrical Workera (AFL- |  | 8 |
| 9 | International Brotherbood of Püp, Sulphite and Paper Mijl | 42,000 | 8 |
|  | Workers (AFL-CIO/CLC) ............................ | 39,900 | 9 |
| 10 | Canadian Brotherhood of Railway, Transport and Geperal Workers (CLC) | 33,500 | 10 |

International unions, with $1,220,000$ members in Canada, continued to comprise just over 70 p.c. of the total union membership in 1966 . Another 26 p.c. of Canada's trade union membership was in national and regional unions; directly chartered local unions comprised 1.5 p.c. and independent local organizations something less than 3 p.c.

There were 217 directly chartered unions reported at the beginning of 1966. Of these, 160 locals with 18,000 members were directly chartered by the CLC; another 57, with a combined membership of 6,800 , were affiliated with the CNTU but not connected with any of the federations of that organization. There were 127 independent local organizations active at the beginning of 1966 , with a total membership of 46,004 , representing 2 p.c. of the total Canadian membership.

## 34.-Union Membership, by Type of Union and Affiliation, as at January 1966

| Type and Affiliation | Unions | Locals | Membership |
| :---: | :---: | :---: | :---: |
|  | No. | No. | No. |
| International Unions. | 111 | 4,765 | 1,219,482 |
| AFL-CIO/CLC. | 90 | 4,303 | 1,070,008 |
| CLC only...... | 3 | 49 | 14,253 |
| AFL-CIO only...... | 8 | 14 | 16,389 |
| Unaffiliated railway brotherhoods Other unafliated umions.......... | $\stackrel{2}{8}$ | 113 | 8,674 |
| Other unaftiated unions. | 8 | 286 | 110,158 |
| National Unlons. | 55 | 2,507 | 415,168 |
| CLC.. | 19 | 1,383 | 179,364 |
| CNTU.. | 14 | 730 | 181,624 |
| Unaffilisted unions | 22 | 384 | 84,175 |
| Drecthy Chartered Latal Unions. | 217 | 217 | 25,181 |
| CLC. | 160 | 160 | 18,414 |
| CNTU. | 57 | 57 | 6,777 |
| Independent Local Orgenizatlons, | 127 | 127 | 46,004 |
| Grand Tetals. | 510 | 7,616 | 1,735,840 |

A complete list of the individual international and national unions, with number of locals and membership in Canada, is carried in the annual Department of Labour publication Labour Organizations in Canada, available from the Queen's Printer, Ottawa, price 50 cents.

## Section 8.-Strikes and Lockouts

Statistical information on strikes and lockouts in Canada is compiled by the Economics and Research Branch of the Department of Labour on the basis of reports from the National Employment Service. Table 35 covers strikes and lockouts lasting ten man-days or more. The developments leading to work stoppages are often too complex to make it practicable to distinguish statistically between strikes on the one hand and lockouts on the other. However, a work stoppage that is clearly a lockout is not often encountered.

The number of workers involved includes all workers reported on strike or locked out, whether or not they all belonged to the unions directly involved in the disputes leading to work stoppages. Workers indirectly affected, such as those laid off as a result of a work stoppage, are not included. Duration of strikes and lockouts in terms of man-days is calculated by multiplying the number of workers involved in each work stoppage by the number of working days the stoppage was in progress. The duration in man-days of all work stoppages in a year is also shown as a percentage of estimated working time, based on the annual average of all non-agricultural paid workers in Canada. The data on duration of work stoppages in man-daya are provided to facilitate comparison of work stoppages in terms of a common denominator. They are not intended as a measure of the loss of productive time to the economy.

## 35.-Strikes and Lockouts, by Industry, 1965 whth Totals for 1961-65

Nors.-Comparable statistica, except tor 1961, are given in the corresponding table of provious Year Books; the latter are available in the Department of Labour annual publication Strikes and Lockouts in Canada.

| Industry | Strikes and Lockouts Beginning during Year | Strikes and Lockonta in Eristence during Year |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Strikes and Lockoute | Workers Involved | Duration in Man-Daya |
|  | No. | No. | No. | No. |
| Asplculture............................................. | - | - | - | - |
| Forestry.. | 3 | 3 | 1,199 | 54,400 |
| Mines. | 25 | 25 | 8,402 | 88,460 |
| Metal. | 11 | 11 | 3,992 | 29,350 |
| Mineral tuels | 10 | 10 | 4,122 | 23,300 |
| Nou-metal. | 1 | $\frac{1}{2}$ | 104 | 4,330 |
| Quarries.......... | 2 | $\stackrel{2}{2}$ | ${ }^{69}$ | 1,250 |
| Incidental services. | 1 | 1 | 115 | 230 |
| Manufacturing. .... | $27 \%$ | 244 | 97,047 | 1,478,7\%0 |
| Foode and beverages. | 25 | 26 | 5,011 | 119,580 |
| Rubber........... | 8 | 9 | 5.343 | 35,960 |
| Leather. | 3 | 3 | 208 | 7,990 |
| Tertilea. | 5 | ${ }^{5}$ | 1, 888 | 30,390 |
| Clothing. | 10 | 10 | 2,541 | 4,470 |
| Wood.... | 9 | 10 | 1,494 | 12,350 |
| Furniture and fistures | 6 | 6 | 279 | 1,630 |
| Paper................. | 12 | 14 | 4.874 | 48,700 |
| Printing and publishing | 5 | 11 | 1,183 | 188, 210 |
| Primary metals... | 18 | 19 | 8.772 | 194,400 |
| Metal fabricating. | 28 | 28 13 | 4,253 9,100 | 27, 600 |
| Transportation equipment. | 26 | 26 | 38,857 | 542.890 |
| Electrical products....... | 19 | 22 | 7,388 | 68.210 |
| Non-metallic mineral producto. | 15 | 15 | 2.470 | 33.520 |
| Petroleum and coal products.. | 7 | 7 | 1,357 | 72,560 |
| Chemical products.......... | ${ }^{7}$ | 13 | 1,326 693 | 12,250 4,030 |
| Miscellaneous manulactaring. | 12 | 13 | 693 | 4,030 |
| Constractlon.. | 127 | 177 | 13,25\% | 23\%,240 |
| Transportation and Utilities. . . . . . . . . . . . . . . . . | 64 | 55 | 32,532 | 331,210 |
| Traneportation............. | 35 | 86 | 13,779 | 152,500 |
| Storage......... | 5 | 5 | 1, 607 | 59,470 |
| Communication ........................................ | ${ }^{2}$ | 2 | 12,278 | 90, 120 |
| Power, gas and water............................. | 12 | 12 | 4,888 | 29,040 |
| Trade. | 21 | 25 | 11,183 | 151,690 |
| Finance. | - | - | - | - |
| Serrice. | 19 | 24 | 2,101 | 42,070 |
| Education......... | 4 | 4 | 1,080 | 18,560 |
| Health and welfare. | 1 | 1 | - 9 | 170 |
| Services to buginess. Personal services.... | 13 | $\overline{14}$ | 992 | 23,160 |
| Miscellaneons services. | 1 | 1 | 20 | 180 |
| Public Administration (local) ........................ | 2 | 2 | 79 | 1,060 |
| Totak . . . . . . . . . . . . . . . . . . . . . . . . . . . 19685 |  |  | 171,878 | 2,344, 870 |
| Totak................................1984 | 327 | 343 | 105,535 | 1,587, 550 |
| 1963 | 318 | 332 | 88,428 | 177,140 |
| 1962 | 296 | 311 | 74,332 | 1,417,909 |
| 1961 | 272 | 287 | 97,959 | 1,335,480 |

## CHAPTER XIX.-TRANSPORTATION

## CONSPECTUS

| Part I.-Government Promotion and Regulation of Transportation. | Page | Subsection 2. Harbours.... . | Page |
| :---: | :---: | :---: | :---: |
|  | 785 |  | 822 |
| Part II.-Rall Transport.... .. | 788 | Subsection 3. Canals....... <br> Subaection 4. The St Lawre | 824 828 |
| Section 1. Rarlways.. | 788 | Subsection 5. Marine Services of the |  |
| Subsection 1. Railway Operating | 790 | Federal Government. | 832 |
| Subsection 2. The Camadian National | 790 | ction 2. Financial Statibtics of |  |
| Railway System......... | 797 | Waterway | 834 |
| Section 2. Expregs Companies | 798 | Part V.-Civil Air Transport. | 838 |
| Part III.-Road Tranepor | 800 | Spectal Article: An Outline of the |  |
| Sbetion 1. Provinctal Motor Vehicle and Traffic Regulations......... | 800 | Development of Civil Alr Transport in Canada. | 838 |
| Section 2. Highyays, Roads and Streete | 804 | Section 1. Civil Aviation Adminietra- |  |
| Section 3. Motor Vehicles. | 808 | tion and Policy. | 843 |
| Part IV.-Water Transpor | 816 | Section 2. Current Air Services... | 5 |
| Section 1. Shipping Facilitiee and |  | Section 3. Civil Aviation Operation | 852 |
| Subsection 1. Ship | 816 816 | Part Vi, -OH and Gas Phpelines | 855 |

The interpretation of the symbols used in the tables throughout the Year Book will be found on $p$. viit of this volume.

The physiographic and population characteristics of Canada present unusual difficulties from the standpoint of transportation. The country extends 4,000 miles from east to west and its main topographic barriers run in a north-south direction, so that sections of the country are cut off from one another by such water barriers as Cabot Strait and the Strait of Belle Isle separating the Island of Newfoundland from the mainland; by rough, rocky forest terrain such as the New Brunswick-Quebee border region and the areas north of Lakes Huron and Superior dividing the industrial region of Ontario and Quebec from the agricultural areas of the Prairie Provinces; and by the mountain barriers between the prairies and the Pacific Coast. To such a country, with a population so dispersed and producing for export as well as for consumption in distant parts of the country itself, efficient and economical transportation facilities are necessities of existence.

## PART I.-GOVERNMENT PROMOTION AND REGULATION OF TRANSPORTATION

The Federal Government plays a twofold role in the development of transportation services. One is a promotional role, ensuring the growth and development of the kind of transportation appropriate to the times. The other is a regulatory role, including economic regulation of rates and services and also technical regulation to meet safety requirements and for other parposes. Examples of promotion are the building of canals from the time of Confederation to the present-day Seaway, the underwriting of railway development and branch-line extension, the establishment of Air Canada, the large investments made in airports and aeronautical installations, and the building of the Trans-Canada Highway. Examples of economic regulation include control over transportation tariffs and services that have been carried out by various federal agencies including the Board of Transport Commissioners, the Air Transport Board and the Canadian Maritime Commission.

The federal Department of Transport and the various Crown agencies reporting to Parliament through the Minister of Transport have jurisdiction over canals, harbours, shipping, civil aviation and interprovincial and international railways. Interprovincial or international pipelines for carrying gas, crude oil or petroleum products are under the jurisdiction of the National Energy Board. Jurisdiction over for-hire interprovincial or
international highway transport also rests with the Federal Government but these powers are exercised by the provincial highway transport Boards under the federal Motor Vehicle Transport Act of 1954.

Rajlway regulation was developed in a period when railways enjoyed a virtual monopoly of transport in the country. Measures to protect the public against excessive charges, unjust discrimination and other objectionable monopoly practices, together with measures to ensure safe operations, have over the years subjected railways to the most comprehensive regulation of any Canadian industry. In the intervening years the rapid growth of road, air and pipeline services has ended the railway monopoly for a large part of the total traffic available and has plunged the railways into a highly competitive situation.

A Royal Commission was appointed in 1959, under the chairmanship first of Hon. C. P. McTague and later of M. A. MacPherson, to inquire into the railway rate structure and other problems. Its findinga were published in three volumes which appeared between March 1961 and July 1962. The report indicated a need to shift from regulating monopoly to maintaining a balance between the several competing modes of transport.

Legislation based on the findings of the MacPherson Royal Commission is before Parliament at this writing (January 1967) in the form of Bill C-231. The Bill defines a national transportation policy for Canada looking to the achievement of an economic and efficient transportation system making the best use of all available modes of transportation at the lowest total cost. It would create a new body, the Canadian Transport Commission, to carry out the functions now performed by the Board of Transport Commissioners for Canada, the Air Transport Board and the Canadian Maritime Commission. In addition, it would be responsible for regulating the pipeline carriage of commodities other than oil and gas, a comparatively new and promising transportation development. The Bill also defines a framework within which the interprovincial and international motor transport industry could be regulated by the proposed Canadian Transport Commission.

The general intent of Bill C-231 is to create a situation in which the development of the transportation industry and the protection of the public against excessive or discriminatory charges are accomplished in the main by competition between modes rather than by regulation and control. The railways would be relieved of some of the more onerous and outdated restrictions on their freedom to meet competition. On the other hand, a shipper who has no practical alternative to rail shipment could apply to have a maximum rate fixed for his goods by the new Commission. The Bill also provides a procedure to allow the railways, under safeguards for the public interest, to abandon lines and withdraw passenger services where they are no longer needed.

The Board of Transport Commissioners for Canada.-The Board of Transport Commissioners for Canada was created and initially named the Board of Railway Commissioners for Canada by the Railway Act, 1903, and was given its present name by the Transport Act, 1938. It was organized on Feb. 1, 1904 and succeeded to all the powers and duties of its predecessor, the Railway Committee of the Privy Council. The Board, now consisting of a Chief Commissioner, an Assistant Chief Commissioner, a Deputy Chief Commissioner and tbree Commissioners, has extensive regulative and administrative powers and is also a statutory court of record, so constituted by the Railway Act and recognized as such by other courts. The finding or determination of the Board upon any question of fact within its jurisdiction is binding and conclusive and no order or decision may be questioned or reviewed except on appeal to the Supreme Court of Canada upon a question of law or a question of jurisdiction with leave of a judge of that Court, or by the Governor in Council.*

The Board has jurisdiction under more than a score of Acts of Parliament, including jurisdiction under the Railway Act and the Transport Act, over transportation by railway and by inland water, and over communication by telephone and telegraph.

[^248]Under the Railway Act its jurisdiction is, stated generally, in respect of construction, maintenance and operation of railways that are subject to the legislative authority of the Parliament of Canada, including matters of engineering, location of lines, crossings and crossing protection, safety of train operation, operating rules, investigation of accidents, accommodation for traffic and facilities for service, abandonment of operation, freight and passenger rates, and uniformity of railway accounting. The Board also has certain jurisdiction over telephones and telegraphs. including regulation of the telephone tolls of The Bell Telephone Company of Canada, the British Columbia Telephone Company, the Bonaventure and Gaspe Telephone Company and the Yellowknife Telephone Company. and over tolls for express traffic and for the use of international bridges and tunnels.

Regulation of railway freight and passenger rates is one of the Board's principal tasks. Except for certain statutory rates, it has power "to fix, determine and enforce just and reasonable rates, and to change and alter rates as changing conditions or cost of transportation may from time to time require"; it may disallow any tariff that it considers to be unjust or unreasonable or contrary to any provision of the Railway Act; it may prescribe other tolls in lieu of the tolls disallowed, or require the railway company to substitute a tariff satisfactory to the Board. During the past decade, there has been a succession of applications for authority to make general freight rate and general telephone rate increases.

Under the Transport Act, the Board entertains applications for licences for ships to transport goods or passengers for hire or reward between places in Canada on the Great Lakes and the Mackenzie and Yukon Rivers, except goods in bulk on waters other than the Mackenzie River. Before granting a licence, the Board must be satisfied that public convenience and necessity require such transport. The Board also has regulative powers over tolls for such transport.

The Air Transport Board.-The Air Transport Board was eatablished in September 1944 by amendment to the Aeronautics Act. Subsequent amendments to the Act were made in 1945, 1950, 1952 and 1966. By the most recent amendment the Board's complement was increased to five members including the Chairman and the staff is comprised of: an Executive Director; a Legal Branch; an Operations Branch which includes a Trafic Division, an Operations Analyst, an International Relations Division, and a Licensing and Inspection Division; an Economics and Accounting Branch; and a Secretary's Branch.

The Board is responsible for the economic regulation of commercial air services in Canada and is also required to advise the Minister of Transport in the exercise of his duties and powers in all matters relating to civil aviation. The regulatory function relates to Canadian air services within Canada and abroad and to foreign air services operating into and out of Canada. It involves the licensing of all such services and the subsequent regulation of the licensees in respect of their economic operation and the provision of service to the public. As provided by the Act, the Board issues Regulations, approved by the Governor in Council, dealing with the classification of air carriers and commercial air services, applications for licences to operate commercial air services, accounts, records and reports, ownership, transfers, consolidations, mergers and leases of commercial air services, traffic tolls and tariffs, and other related matters. Detailed regulatory instructions are issued by the Board in the form of General Orders and Rules relating to all air services or groups of air services, Board Orders relating to individual air services, and Circulars for general guidance and information.

On Oct. 20, 1966, the Minister of Transport tabled in the House of Commons a "Statement of Principles for Regional Air Carriers", which assigned to the Board the responsibility for initiating measures to implement the policy set out therein. In this connection, the Board is introducing regulations respecting domestic and international charter and inclusive-tour operations, subsidies to regional air carriers, and increased financial control, and is reviewing the route structures of regional air carriers.

The Board takes an active part in the work of the International Civil Aviation Organization and, when appropriate, undertakes bilateral negotiations for the exchange of traffic rights. At present, Air Canada and Canadian Pacific Airlines Limited are Canada's designated international scheduled carriers.

The Canadian Maritime Commission.-The Canadian Maritime Commission was established by Act of Parliament in 1947 (RSC 1952, c. 38) as a separate department of the Government reporting to Parliament through the Minister of Transport. It is the function of the Commission to "consider and recommend to the Minister from time to time such policies and measures as it considers necessary for the operation, maintenance, manning and development of a merchant marine and a ship-building and ship-repairing industry commensurate with Canadian maritime needs" The Commission is authorized to examine into, ascertain and keep records of all phases of ship operation and to "administer, in accordance with regulations of the Governor in Council, any steamship subventions voted by Parliament" The Commission administers the Canadian Vessel Construction Assistance Act (RSC 1952, c. 43) which allows shipowners to benefit from accelerated depreciation and, under given circumstances, from tax relief.

Subsidies are paid by the Federal Government for the maintenance of essential steamship services; the services and the amounts paid for the years ended Mar. 31, 1965 and 1966 are given on p. 838.

The National Energy Board.-The National Energy Act (SC 1959, c. 46) proclaimed Nov. 1, 1959, provided for the establishment of a five-member Board charged with the duty of assuring the best use of energy resources in Canada. In the performance of this function, the Board is responsible for the regulation of the construction and operation of the oil and gas pipelines that are under the jurisdiction of the Parliament of Canada, the tolls charged for transmission by oil and gas pipeline, the export and import of gas and the export of electric power, and the construction of the lines over which such power is transmitted. The functions and operations of the Board are covered in the Domestic Trade and Prices Chapter of this volume, Part II, Section 4.

## PART II.-RAIL TRANSPORT*

## Section 1.--Railways $\dagger$

Since Confederation the railways of Canada have been the principal transport facility throughout, and beyond, the nation. The two great transcontinental systems, supplemented by a major north-south line on the West Coast and a number of regional independent railways, are the only carriers able to transport large volumes of freight at low cost in all weather by continuous passage over Canadian transcontinental routes.

The two nation-wide railway companies control a wide variety of Canadian and international transport and communications services. The government-owned Canadian National Railway System is the country's largest public utility and operates the greatest length of trackage in Canada. It is the only railway serving all ten provinces and has completed a branch line to serve the Great Slave Lake area of the Northwest Territories. In addition, it operates a highway service, a fleet of coastal steamships, an extensive express service, a chain of large hotels and resorts, and a scheduled air service connecting all major cities across the country and Canadian with other North American and European points. The Canadian National, jointly with the Canadian Pacific Railway Company, operates a national telecommunications system that employs modern microwave, bighspeed teletype and private wire networks, telex, data and weather facsimile transmission and movement of telegrams to any point in the world. The Canadian Pacific Railway Company is a joint-stock corporation also operating a transcontinental railway, an express service, a domestic truck and bus network, a fleet of inland, coastal and ocean-going vessels, a chain of year-round and resort hotels, a domestic airline servicing points in British Columbia, Alberta and Yukon Territory, a transpacific airline service to the Orient and the Antipodes, air services to Mexico, Peru, Chile and Argentina, a transpolar air route connecting Vancouver and Amsterdam, a transatlantic service to Portugal, Spain and Italy, and a (one flight daily) transcontinental air service between Vancouver and Montreal.

[^249]Canadian National's new furbine-driven passenger train will be in service between Montreal and Toronto in mid-1967. It will zip non-stop over the 335 miles between the two cities in about $3 \frac{1}{2}$ hours, almost halving the time required two years previously.


The new train is constructed almost completely of weight-saving aluminium, fabricated on aerodynamic lines and climaxes more than 100 years of progress in travelling speed and comfort.


The Pacific Great Eastern Railway, owned by the British Columbia Government, operates over an 800 -mile route from North Vancouver to Fort St. John in the Peace River area of northeastern British Columbia, with several northern branch lines recently completed or under construction. Interline barge and rail connections at Vancouver provide a complete service to any railway point on the Continent. The completion in 1958 of the northern section of this line opened up to development the vast interior of the province, providing access to its rich natural resources and stimulating large-scale investment in new industrial plants throughout the area it serves. The PGE is fully dieselized and controlled by an intricate microwave system from its Vancouver offices.

Government Aid to Railways.-In order that the private railways of Canada might be constructed in advance of settlement as colonization roads or through sparsely settled districts where little traffic was available, it was necessary for federal and provincial governments and even for municipalities to extend some form of assistance. The form of aid was usually a bonus of a fixed amount for each mile of railway constructed and, in the early days, grants of land were also made other than for right-of-way. As the country developed, objections to the land-grant method became increasingly apparent and aid was given more frequently in the form of a cash subsidy for each mile of line, a loan or a subscription to the shares of the railway. Guarantees of debenture issues came later and, since the formation of the Canadian National Railways, all debenture issues of that System, except those for rolling-stock, have been guaranteed by the Federal Government. During the era of railway expansion before 1918, provincial governments guaranteed the bonds of some railway lines that afterwards were incorporated in the Canadian National Railway System. These bonds as they mature or are called are paid off by the Canadian National Railways, in large measure through funds raised by the issue of new bonds with Federal Government guarantee. Railway bonds guaranteed by the Government of Canada at Dec. 31, 1965 amounted to $\$ 1,366,061,500$.

For some years the Federal Government has been assisting shippers by bearing a portion of rail transportation costs on certain types of traffic moving between and within specific areas of Canada. Reimbursement to the railways for diminution of revenue resulting from these reductions has been provided through four principal plans: the Freight Rates Reduction Act (SC 1959, c. 27), which reduces for shippers, on certain classes of traffic, the full effect of the last freight rate increase authorized by the Board of Transport Commissioners for Canada in 1958; the East-West Bridge Subsidy, which provides reduced rates to shippers on certain traffic moving between Eastern and Western Canada; the Maritime Freight Rates Act (RSC 1952, c. 174), which reduces rates to shippers on traffic moving within and out of the Atlantic Provinces; and interim payments related to recommendations of the MacPherson Royal Commission. (See also p. 786.)

## Subsection 1.-Railway Operating Statistics

Track Mileage.*-Construction was begun in 1835 on the first railway in Canadathe short link of 14.5 miles between Laprairie and St. Johns, Que.-but only 66 miles were in operation by 1850. The first great period of construction was in the 1850 s when the Grand Trunk and the Great Western Railways were built as well as numerous smaller lines. The building of the Intercolonial and the Canadian Pacific Railways contributed to another period of rapid expansion in the 1870 s and 1880 s . In the last period of extensive railway building (1900-17), the Grand Trunk Pacific, National Transcontinental and Canadian Northern Railways were constructed.

There has been littie change in total track mileage since the 1920s. The mileage peak was reached in 1959 and there has since been a gradual decline, new construction being more than offset by abandonment of unprofitable lines. In recent years, the development of a number of large projects in districts far removed from transport facilities and the

[^250]opening up of the Northwest Territories have necessitated the building of branch lines. Those completed up to 1956 are listed in the 1957-58 Year Book, p. 815, and those completed from that year to 1964 are mentioned in subsequent editions. During 1965-66, the CNR completed a 12 -mile line from Froomfield spur at Sarnia, Ont., to Courtright, Ont. By the spring of 1965, all track was laid on the Great Slave Lake Railway which extends 377 miles from Roma, Alta., to Hay River, N.W.T., with a $53-\mathrm{mile}$ branch to Pine Point mines. Ballasting and lifting operations were completed by mid-summer 1966. Negotiations took place with several mining companies concerning provision of rail service to base-metal deposits and legislative authority was given for the construction of a 68 -mile line from the vicinity of Amesdale to the vicinity of Bruce Lake in the District of Kenora, Ont.; of a 12 -mile line from the vicinity of Stall Lake to the vicinity of Osborne Lake in The Pas district of Manitoba; and an 18 -mile line from the vicinity of Watrous to the vicinity of Guernsey in the Regina Mining District of Saskatchewan.

The 23-mile Mackenzie addition to the PGE from Kennedy to Mackenzie near the Peace River Reservoir in northeastern British Columbia was completed in 1966, as was the first stage of the Takla Lake extension to Fort St. James. Survey work was under way for the 40 -mile extension from Fort St. John to Beatton River on the route to Fort Nelson.

## 1.-Railway Track Mileage Operated, 1900-65

Nore.-Figures of total mileage of first main track operated for 1835-1954 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

| First Main Track Mmeage ${ }^{1}$ |  | Track Mileage by Area and Type |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year | $\left\lvert\, \begin{gathered} \text { Miles } \\ \text { in } \\ \text { Operation } \end{gathered}\right.$ | Area and Type of Track | 1962 | 1963 | 1964 | 1965 |
|  | No. | First Main- | No. | No. | No. | No. |
| 1900.. | 17,657 20,487 | Newfoundland Mrince Edward Island | 935 279 | 934 279 | 934 279 | 936 279 |
| 1910. | 24,781 24 | Prince Edward Island Nova Scotia....... | 279 1,270 | $\begin{array}{r}179 \\ +1.315 \\ \hline\end{array}$ | 1.314 | - 279 |
| 1915. | 34,882 | New Brunswick. | 1,782 | 1,771 | 1,760 | 1,730 |
| 1920. | 38,805 | Quebec. | 5,349 | 5,361 | 5,163 | 5,238 |
| 1925. | 40,350 | Ontario. | 10,137 | 10,117 | 10,073 | 9,950 |
| 1930. | 42,047 | Manitobs. | 4,897 | 4,860 | 4,858 | 4,735 |
| 1935. | 42,916 | Saskatchewan. | 8,588 | 8,577 | 8,566 | 8,522 |
| 1940. | 42,565 | Alberta. | 5,683 | 5,583 | 5,682 | 5,723 |
| 1945 | 42,352 | British Columbia | 4,337 | 4,329 | 4,329 | 4,333 |
| $1950{ }^{2}$. | 42,979 | Yukon Territory. | 58 | 58 | 58 | 58 |
| 1955. | 43,444 | United States.. | 339 | 339 | 339 | 339 |
| 1957. | 43,890 | Totals, First Main.. | 43,654 | 43,623 | 43,355 | 43,157 |
| 1958. | 44,125 |  |  |  |  |  |
|  | 44,209 | Second main. | 2,081 | 2,016 | 2,010 | 1,804 |
| 1961. | 44,029 43,689 | Other main. | 48 | , 56 | 56 | , 56 |
| 1962. | 43,654 | Industrial. | 1,266 | 11,265 | 1,281 | 11,309 |
| 1963. | 43,623 | Yard and sidings. | 11,710 | 11,551 | 11,541 | 11,676 |
| 1965. | 43,157 | Grand Tot | 58,759 | 58,511 | 58,243 | 58,002 |

[^251]Rolling-Stock.-Table 2 shows the numbers of the various types of freight and passenger equipment in operation in 1959 and in 1965, revealing a generally downward trend over the period; however, these figures do not reflect the offsetting trend toward larger, more efficient cars and locomotives or the steady improvement in speed of movement facilitated by modernized handling and terminal services. Each year hundreds of units, particularly freight cars, are converted and modified to make them suitable for specific types of traffic or are replaced by special-purpose equipment designed for distinctive hauling jobs. The average capacity of all freight cars was 53.8 tons in 1965 compared with 51.1 tons in 1959. Also, although the number of diesel-electric lomotives in service has remained
fairly static over this period, it should be noted than an extensive program of power upgrading has been followed by the railway companies. The combined tractive effort (the force exerted by powered equipment measured at the rim of the driving wheels) of all locomotives in 1965 averaged $58,571 \mathrm{lb}$. as compared with $53,368 \mathrm{lb}$. in 1959.

## 2.-Railway Rolling-Stoek in Operation as at Dec. 31, 1959 and 1965

| Type | 1959 | 1965 | Type | 1959 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. | No. |
| Lacomotives | 4,720 | 3,323 | Freight Cars. | 194,512 | 182,890 |
| Steam- |  |  | Automobile. | 7,270 | 3.696 |
| Coal-burning | 1,143 | - | Ballast. | 3,140 | 2,806 |
| Oil-burning | 371 |  | Bor. | 144.181 | 105.822 |
| Diesel electric | 3.153 | 3,238 22 | Flat.... | 12.270 | 13,475 |
| Other ${ }^{1}$. | - | 68 | Hopper. | 15,601 | 18,157 |
|  |  |  | Ore. | 5,984 | 5,964 |
| Passenger Cars................... | 5,459 | 3,638 | Refrigerator | 10,155 | 7,936 |
| Caseb. | 1.409 | 984 | Stoek | 5,025 | 3,150 |
| Combination | 182 | 114 | Tank | 455 | 499 |
| Dining. | 159 | 153 | Othe | 23 | 1,153 |
| Parlour. | 143 | 130 |  |  |  |
| Sleeping........................ | 919 | 641 |  |  |  |
| Baggage, express and postal..... | 2.353 | 1,432 | Privately Owned Cars: | 4,858 |  |
| Sell-propelled....................... | 128 67 | 113 30 | Tank. | 4,809 44 | 5,984 |

[^252]Passenger and Freight Traffic.-Table 3 shows passenger and freight statistics for all railways for the years 1961-65. A separate analysis of the operations and traffic of the Canadian National Railways is given at pp. 797-799.
3.-Statistics of Passenger and Freight Service and Revenue, 1061-65

| Item | 1961 | 1962 | 1963 | 1864 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Passenger Service |  |  |  |  |  |
| Revenue passenger-train milest............ '000 | 81,131 | 29,217 | 28,239 | 28,631 | 29,397 |
| Pasaenger-train car milest................... | 311.912 | 296,950 | 285.942 | 308,941 | 206.574 |
| Pasoengers carried. . . . . . . . . . . . . . . . . . . . . | 18,784 | 19,258 | 20.638 | -22,915 | 24, 618 |
| Prasenger-miles ............................ | 1,980, 5981 | 2,018,842 | 2,069,565 | 2,881. 234 | 2,664,115 |
| Passenger-miles per mile of line............ ${ }^{\text {a }}$ No. | 48,631 | 45,048 3.00 | 46,260 2.88 | $\begin{array}{r}60.44 \\ 2.38 \\ \hline\end{array}$ | 2.47 |
| Average recejpts per passenger-mile......... cta. | 3.12 8.26 | 3.15 | 2.89 | 2.78 | 2.67 |
| Average psesenger journey.................., miles | 104 | 105 | 100 | 117 | 108 |
| Average passengers per train................. No. | 63 | 69 | 78 | 04 | 1 |
| Pasbenger-train revenue per passenger-train mile. | 3.32 | 3.56 | 3.51 | 3.64 | 3.6 |
| Freight Slervice |  |  |  |  |  |
| Revenae freight-train miles. . . . . . . . . . . . . . ${ }^{\text {, 000 }}$ | 60,593 | 60,308 | 62.639 | 66.785 | 67,961 |
| Revenue freigbt-train car miles ${ }^{3}$............. | 3,234,588 | 3,256,175 | 3,485,075 | 3,768.687 | 3, 807.321 |
| Freight carried ${ }^{\text {. . . . . . . . . . . . . . . . . . . . . . . }}$ '000 torts | 153,202 | 164,112 | 172.897 | 190, 160 | -198,494 |
| Freight ton-miles........................ '000 ${ }^{\text {, }}$ | 65,828,403 | 67,937, 162 | 75,796,023 | 85,032,999 | 87, 190, 358 |
| Freight ton-milee per mile of tine............ " | 1,464 | 1,518 | 1,694 | 1,917 | 1,965 |
| Freight receipts per tin per mile............ cts. | 1.54 | 1.50 | 1.41 | 1.37 | 1.39 |
| Receipts per ton bsuled. . . . . . . . . . . . . . . . . | 6.62 | 8.34 | 6.21 | 6.17 | $\stackrel{6.16}{443}$ |
| Average lentth of freight haul................ miles | 430 | 422 | 441 | 1488 | 1.283 |
| Average train losd, revenue tons........... No. | 1,086 33.79 | ${ }_{34.71}^{127}$ | 1,210 36.81 | 1,278 | 89.64 |
| Average load per loaded carmile........... tona | 16.72 | 16.91 | 17.04 | 17.51 | 17.88 |

[^253]The tonnage of revenue freight carried (including national loadings and receipts from United States connections) continues to increase year by year, the total in 1965 being 3.8 p.c. higher than in 1964. All the main commodity groups except agricultural products and animal products contributed to the increase. Of the $196,816,887$ tons carried in 1965 (excluding freight handled by more than one railway and in intermediate switching), mine products accounted for 41.9 p.c., manufactures and miscellaneous products for 31.9 p.c., agricultural products 15.4 p.c., forest products 9.4 p.c., animal products 0.8 p.c., and less-than-carload freight for 0.6 p.c.; in 1964 the proportions were 39.7 p.c., 30.8 p.c., 18.8 p.c., 9.3 p.c., 0.9 p.c., and 0.5 p.c., respectively.

## 4.-Commoditles Hauled as Freight by Railways, 1961-65

Nors.-In this table duplications are eliminated, i.e., the same freight handled by two or more railways is counted only once. The statistics do not include the United States lines of the Canadian National Railways, but the link of the Canadian Pacific Rsilway line across Maine, U.S.A., is included, as are the Canadian bections of United Statea railways,

| Commodity | 1961 | 1962 | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | tons | tons | tons | tons | tons |
| Agricultural Products. | 28, 012.441 | 25.177,337 | 29, 303.974 | 35,686, 429 | 30,369, 284 |
| Wheat | 15,155, 289 | 13,403,510 | 16,311,535 | 21,154,965 | 17, 173, 187 |
| Corn | 838, 465 | 1,048, 821 | 966,449 | 1,037.039 | 1,090,003 |
| Oats | 982, 668 | 935+985 | 1,556,288 | 1,229,384 | 1,344.012 |
| Barley | 2,710, 482 | 1,740,092 | 2,188,983 | 2,706.816 | 2,253,706 |
| Other grain | 278, 433 | 361,658 | 308, 139 | 34, 983 | 338. 361 |
| Flour, whes | 1.480 .964 | 1,504, 838 | 1,545.738 | 1,859,599 | 1,528,737 |
| Other mill product | 1,697.726 | 1,489,868 | 1, 693,722 | 2,253.443 | 1,819, 390 |
| Potatoes, other than | 611,846 | 806.160 | 797,953 | 845,992 | 878,713 |
| Sugar beet | 658.597 | 477.670 | 609. 150 | 618.206 | 509.311 |
| Flaxseed. | 481,201 | 451,432 | 368,712 | 656,618 | 502,697 |
| Other agricultural producta | 3,125,019 | 2,959,305 | 3,058,295 | 2,978,386 | 2,931,367 |
| Animal Products | 1,619,212 | 1,508,284 | 1,589.037 | 1, 684,139 | 1,466,389 |
| Cattle and calve | 278,954 | 231,417 | 194,571 | 233,647 | 247, 557 |
|  | 163,513 | 144,906 | 126,960 | 129,058 | 108, 164 |
| products.. | 617.970 | 591,605 | 672,350 | 757,418 | 635,258 |
| Other animal products | 558,775 | 540,356 | 535, 156 | 544, 016 | 475. 401 |
| Mine Products | 61,388,644 | 68,236,842 | $71,828,970$ | 75.242, 381 | 82, 458, 654 |
| Coal, bituminou | 10,461.389 | 10,184, 111 | 10,002,904 | 10,449,727 | 10,725, 702 |
| Otber coal and | 2.720.659 | 2, 368,085 | 2,356, 378 | 2,554,441 | 2.715,381 |
| Iron ore. | 16.897, 166 | 24,239, 159 | 27,698,186 | 25.725.343 | 29,716,750 |
| Ores and concent | 9,420. 171 | $8.012,497$ | 7+364, 175 | 9,344, 104 | 11.508. 223 |
| Gravel sud sand .................... | 5,783,376 | 6,258,480 | 6,513,801 | 7,770,785 | 7,299,497 |
| erushed... | $5,237+255$ | 5,017,049 | 5,430, 004 | 5,387,391 | 6, 123,381 |
| Salt. | 1.275.427 | 1,587,575 | 1,194,617 | 1,268,105 | 1,481,173 |
| Phogphate | 796, 295 | 1,024, 374 | 1,023, 821 | 1.159,566 | 1,425, 307 |
| Subbestos, not further processed | \$32, 604 | 775,359 | 1,309,600 | 1,890,805 | 2,060,798 |
| milled... | 1,073,129 | 1.073.988 | 1,054,276 | 1,206,608 | 1,176,143 |
| Gypsum, crude | 4,002, 471 | 4,451.586 | 4,841.053 | 4,888,650 | 4,709,639 |
| Other mine producte. | 3,178.702 | 3.244,579 | 3,040, 155 | 3,586,856 | 3,536,660 |
| Forest Products. | 14, 491, 704 | 15.441, 325 | 15,927, 443 | 17,731,444 | 18,443,714 |
| Logit butts, bolta, posts, poles and piling, wooden. | 2.057,380 | 2,602,679 | 2,632,962 | 2,878,683 | 2,728, 026 |
| Pulpwood | 4.574,296 | 4,867,930 | 4,857,912 | 6.026,932 | 7,213, 616 |
| Lumber, eningles and lath........... | 6.398 .233 | 6,608,073 | 6,941+623 | 7,241,184 | 6.871,158 |
|  | ${ }_{6029} 8.210$ | 855.776 | 887,076 | 989,971 | 1,061,932 |
| Other forest products. | 602,585 | 506,867 | 607,870 | 594,664 | 568,982 |
| Manufactures and Miscellaneous . | 46,378.066 | 45.342.838 | 52,062.773 | 58,413,648 | 62,848.885 |
| Gasoline and petroleum products. | 6,887, 884 | 6.962.857 | 7,647.090 | 8.124,687 | 8,854,208 |
| Fertilizers.... ${ }^{\text {Iran and steel }}$ (bar, sheet, st.......... | 2,207, 462 | 2,523, 154 | 3,352,315 | 3,693,204 | 4,557,508 |
| Iron and steel (bar, sheet, structural, pipe). | 3,837,000 | 3,709,838 | 4,056,599 | 5,472,140 | 8,358,719 |
| Automobiles, trucke | 1.673,124 | 2,008,748 | 2,142.845 | 2,278, 802 | 2,795,878 |
| Weod put | 1,545.258 | 1.3599.580 | 1, 451.026 | 1,787,747 | 2.037,131 |
| Nowrsprint. ....... | 4,397,864 | $3,048,415$ $4,232,493$ | 3, 1,121,218 | 3,431,137 $4,497,987$ | 3,538,129 |

## 4.-Commodities Hauled as Freight by Railways, 1961-65-concluded



Raitway Accidents.-Accidents shown in Table 5 include all those in which railway trains were involved and accidents on railway property; all passengers injured are included but, for employees, only those who were kept from work for at least three days during the 10 days following the accident are recorded. The classification of accidents used in reporting other DBS statistics treats collisions between motor vehicles and trains as motor vehicle accidents. Therefore, care should be exercised when compiling total accidental deaths of all kinds or when comparing results of accidents of different kinds, such as train and motor vehicle.
5.-Persons Killed or Injured on Railways, by Spectied Cause, 1963-65

| Item | 1963 |  | 1964 |  | 1965 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Killed | Injured | Killed | Injured | Killed | Injured |
|  | No. | No. | No. | No. | No. | No. |
| Accidents Resultino prom Movement of Trains, Locomotrves dr Cars |  |  |  |  |  |  |
| Class of Person- |  |  |  |  |  |  |
| Passengers... | $2{ }^{2}$ | 157 853 | ${ }_{23}^{8}$ | 138 1,078 | $2{ }_{2}^{2}$ | 1, ${ }^{273}$ |
| Trespassers.... | 43 | 45 | 61 | 1,42 | 50 | 153 |
| Non-trespassers. | 158 | 517 | 159 | 498 | 157 | 557 |
| Postal clerks, expressmen, etc. . . . . . . . . . . . . . . | - | 15 | - | 18 | - | 14 |
| Totals. | 226 | 1.58\% | 251 | 1,769 | 229 | 2,077 |
| Description of Accidents (employees and passengers only)- |  |  |  |  |  |  |
|  | 4 | 40 | 11 | 45 | 6 | 56 94 |
| Derailments........ | 3 | 82 | 1 | 18 | 2 | 143 |
| Falling from trains or cars | 4 | 41 | 1 | 59 | 2 | 42 |
| Getting on or off trains.. | 7 | 231 | ${ }_{10}^{2}$ | ${ }_{15}^{284}$ | $\stackrel{2}{4}$ | 310 18 |
| Struck by trains, etc............................ | ${ }_{1}^{6}$ | 14 552 | 10 | 15 716 | 4 5 | 790 |
| Totals. | 25 | 1.010 | 31 | 1,216 | 22 | 1,453 |
| All Other Accloents |  |  |  |  |  |  |
| Class of Person- |  |  |  | 2,054 | 15 | 2,332 |
|  | - | 1,95 | , | 2,72 | $\frac{1}{1}$ | 57 |
| Otbers.... | 1 | 39 | 2 | 77 | 1 | 73 |
| Totals. | 11 | 2,006 | 12 | 2,203 | 18 | 2,462 |

Finances.-Tables 6 to 9 give information on capital liability and capital investment in road and equipment, operating revenues and expenses, eraployees and their earnings for all railways.* Financial statistics of government-owned railways are given separately and in detail in Subsection 2. A Uniform Classification of Accounts for common carriers became effective for the Canadian National and the Canadian Pacific Railways on Jan. 1, 1956, and for all other common carrier railways on Jan. 1, 1957. In transportation statistics a distinction is made between expenditures and expenses. In the following data, the term 'expenses' is used as defined in the Uniform Classification of Accounts and refers to the expenses of furnishing rail transportation service and of operations incident thereto, including maintenance and depreciation of the plant used in such service.

## 6.-Capttal Liability of Railways, 1856-65

Nore.-Figures from 1876 will be found in the corresponding table of previous Year Booke beginning with the 1927-28 edition.
(Exchusive of Canadian railwsy capital owned by Canadian railways)

| Year | Stocks | Funded Debt | Total | Year | Stocks | Funded Debt | Total ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | 5 | \$ |  | \$ | \$ | \$ |
| 1956. | 2,572,487,313 | 1,612,706,551 | 4,185, 193, 864 | 1961. | 2,748,537,919 | 2,234,316,735 | 4,982,854,854 |
| 1957. | 2,565,559,683 | 1,764,660,210 | 4.330,219,893. | 1962 | 2,769.152.492 | 2,245,189,028 | 5,014,341,520 |
| 1958. | 2,646,659,697 | 1,953,114,826 | 4,509,774,523 | 1963. | 2,791,044,973 | 2,183,556, 189 | 4,974,601,112 |
| 1959. | 2,669,062,259 | 2,122,675,213 | 4,791,737, 482 | 1964 | 2,815,148,215 | 2,181,454,852 | 4,906, 603,067 |
| 1960. | 2,725, 827, 898 | 2,244,571,812 | 4, 970, 399, 498 | 1965 | 2,843, 118, 935 | 2,187,613,273 | 5,080,732,208 |

${ }^{1}$ Exelusive of approsimately $\$ 40,000,000$ railway debt in Newfoundiand.

## 7.-Capital Invested in Railway Road and Equipment Property, 1961-65

Nors.-Credit entries in this table result when the annual "write-offs" are grester than the annual investment in any category.

| Invertment | 1961 | 1982 | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ | $\delta$ |
| Rosd. | 72, 244,887 | 70,674,769 | 125,463,519 | 74,388,731 | 84,097,911 |
| Equipment | Cr. $30,683.878$ | 7,258,657 | Cr. 16,753,029 | 40,086,021 | 100,984, 284 |
| General... | 3,152,244 | Cr. 243,729 | C 84,786 | - 45,989 | 325,546 |
| Undistributed............. | 40,971,544 | 12,905,861 | Cr. 2,626,787 | Cr. 7,538,650 | Cr. 34,491,325 |
| CNR ron-rail property ... | $15,506,157$ $25,492,759$ | $10,515,998$ $2,581,950$ | Cr. $\begin{array}{r}8,771,974 \\ 8,845,548\end{array}$ | Cr. $\begin{array}{r}77,619,816 \\ \text { 17,710 }\end{array}$ | Cr. $\begin{array}{r}\text { 4,768, } 492 \\ 4,206,768\end{array}$ |
| Other ** | Cr. ${ }_{\text {27, }}$ | Cr. $\quad 189,997$ | Cr. ${ }_{\text {2,446,787 }}$ | O. 2,881,244 | -r. 4,005, ${ }^{446}$ |
| Totak | 85,684,597 | 90,595,558 | 106,168,489 | 106,982,091 | 15*,316,416 |
| Cumulative investment to Dec. 31. | 6,830,890,938 | 6,920,086,497 | 7,027, 154,986 | 7,134,137,077 | 7,285,053,493 |

Revenues and Expenses.-Railway operating revenues and expenses continue to rise, both reaching peak levels in 1965; increases over 1964 amounted to 3.6 p.c. and 4.1 p.c., respectively, and because the increase in expenses was higher than that in revenues, net earnings decreased.

Of the total operating expenses in 1965 amounting to $\$ 1,291,840,958$, those connected with the transporting of persons and property, such as station, yard and terminal services

[^254]and employees, wharves, fuel, etc., accounted for 38.2 p.c.; equipment maintenance for 22.1 p.c.; road maintenance for 19.4 p.e.; rents and taxes for 6.9 p.c.; expenses connected with traffic soliciting, such as advertising and information, ticket and freight offices, etc., for 2.7 p.c.; and misceilaneous expenses, including incidentals, dining and buffet services, grain elevators, etc., for the remaining 10.7 p.c. These proportions have remained fairly constant in recent years.

## 8.-Operating Revenues and Expenses of Railways, 195\&-65

Nors--Operating revenues and expenses from 1875 are given in previous editions of the Year Book beginning with the 1916-17 edition.

| Year | Total Operating Revenues | Total Operating Expenes | Ratio of Operating Expenses to Operating Revenues | Per Mile of Line |  |  | FreightTrain Revenue per FreightTrain Mile | Passenger Train Revenue per <br> Passenger Train Mile |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Operating <br> Revenues | Operating Expenses | Net Operating Revenues |  |  |
|  | \$ | * | p.c. | \$ | \$ | \$ | \$ | \$ |
| 1956. | 1,300,623,923 | 1.171.338,574 | 90.06 | 29.047 | 26.159 | 2.888 | 12.75 | 3.16 |
| 1957. | 1,263, 147,930 | 1,203,530, 148 | 95.28 | 28,171 | 26,841 | 1,330 | 13.85 | 3.30 |
| 1958. | 1,163,735,417 | 1,132,277,504 | 97.30 | 25,766 | 25,070 | . 686 | 14.51 | 3.11 |
| 1959. | 1,224,567,928 | 1,166,306,724 | 95.24 | 27,093 | 25,804 | 1,289 | 15.48 | 3.29 |
| 1960 | 1,151,655,456 | 1, 109,470,426 | 96.34 | 25.54 | 24,608 | 936 | 15.54 | 3.48 |
| 1981. | 1,156, 480,700 | 1,114,432,525 | 96.36 | 25,736 | 24.800 | 936 | 16.72 | 3.32 |
| 1962. | 1,165,296,722 | 1,119,662, 072 | 96.08 | 28,002 | 24.984 | 1.018 | 18.91 | 3.56 |
| 1963. | 1.210,209,799 | 1,149,530. 526 | 94.99 | 27,051 | 25,695 | 1,356 | 17.04 | 3.51 |
| 1964. | 1,324,422,492 | 1,241,258,855 | 93.72 | 29,857 | 27,982 | 1,875 | 17.51 | 3.64 |
| 1965. | 1,372,304,959 | 1,291,840,958 | 94.14 | 30,927 | 29,114 | 1,813 | 17.82 | 3.68 |

Employment, Salaries and Wages.-Rail employment in 1965 was down slightly from the preceding year. Over the ten-year period 1956-65, employment dropped 28.1 p.c. but the average annual salary for the industry was 48.3 p.c. higher and total compensation paid was up 6.6 p.c. It should be noted that employee data for 1964 and 1965 were based on a new Uniform Canadian Classification of Railway Employees in which a bi-monthly method of counting was introduced; this method tends to reduce the number of employees by from 2 to 3 p.c. Details are given in DBS publication Railway Transport, Part VI (Catalogue No. 52-212).

## 9.-Railway Employees and Their Earnings, 1956-65

Nore.-Figures include employees and wages for 'outside' operstions amounting to from 3 to 6 p.c. of total employees and from 2 to 5 p.c. of total salaries and wages. Figures for 1912-55 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

| Year | Employees ${ }^{1}$ | Total Salaries and Wages | Average Salarien and Wages | Ratio of Total Payroll (charged to opersting erpensee) to- |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Operating Revenues | Operating Expengea |
|  | No. | 1 | * | p.c. | D.c. |
| 1956........... | 215.324 212,426 | $780,135,918$ $791.529,117$ | 3,623 3,726 | 50.6 81.4 | 55.9 53.9 |
| 1958. | 192,809 | 757,907, 896 | 3,931 | 52.7 | 54.3 |
| 1959. | 187,981 | 780, 031,534 | 4.150 | 61.6 | 54.2 |
| 1960.... | 175,537 | 740,475,804 | 4,218 | 52.0 | 54.2 |
| 1961. | 166,081 | 748,097,831 | 4,504 | 52.7 | 54.9 |
| 1962. | 162,881 | 747,301,214 | 4,589 | 51.4 | 53.7 |
| 1983 | 156.5272 | 756, 862, 741 | 4,835 | 50.4 | 53.1 |
| 1964. | 157,6432 | 798,537,454 | 5,065 | 49.1 | 52.3 52.4 |
| 1985.... | 154, $832{ }^{2}$ | 881, 818,991 | 5,872 | 49.3 | 52.4 |

[^255]
## Subsection 2.-The Canadian National Railway System*

In view of the interest in Canada's publicly owned railway, the Canadian National Railway System is given separate treatment in this Subsection. More detailed information than can be given here is obtainable from DBS annual report Canadian National Railuays (Catalogue No. 52-201).

Financial Statistics.-The original financial structure of the CNR and the steps taken through the Capital Revision Acts of 1937 and 1952 to alleviate the burden of interest debt undertaken by the company on its formation in 1923 are described in the 1955 Year Book, pp. 840-847. Briefly, the Capital Revision Act of 1937 wrote off all loans that had been made to cover deficits and also umpaid interest on loans, and certain loans made for the purpose of additions and betterments were converted to equity capital, relieving the CNR from paying fixed charges on this amount. Under the 1952 Capital Revision Act, 50 p.c. of the company's interest-bearing debt was changed to preferred stock on which, after settling income taxes, a dividend of 4 p.c. is paid on earnings. Also, for a term of ten years ended Jan. 1, 1962, the Railway was not obliged to pay interest on $\$ 100,000,000$ of its long-term debt. The Government is authorized to buy additional preferred stock annually in amounts related to the company's gross revenues. As a consequence, the proportion of total capitalization represented by equity capital in shareholders' account was raised from 34.5 p.c. at Dec. 31, 1951 to 67.2 p.c. at Jan. 1, 1952, and the proportion of borrowed capital was correspondingly reduced. By the end of 1965 , the proportion represented by equity capital in sharebolders' account was 51.0 p.c.

[^256]
## 10.-Capital Strueture of the Canadian National Railway System as at Dee. 31, 1956-65

| At Dec. 31- | Sbarebolders' Capital |  | Funded Debt Held by Public |  | Government Loans and | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Government of Canada Sbareholders' Account | Capital Stock Held by Public | Guaranteed by <br> Federal and Provincial Governments | Otber | priationg- <br> Active Assets in Public Accounts |  |
|  | \$ | 5 | \$ | \$ | 1 | \% |
| 1956. | 1,616,270,966 | 4,508,670 | 794,482,006 | 25,086,606 | 353,664,828 | 2,794,013,976 |
| 1857. | 1,689,451,306 | 4,505,870 | 730, 346,711 | 17,978,788 | 623,967,851 | 3,016,250,526 |
| 1958. | 1,704, 387, 845 | 4,504,203 | 1,024,710,205 | 9,098,765 | 484,791,699 | 3,227,492,717 |
| 1959. | 1,723, 909,722 | 4,503,548 | 1,335,510,205 | 5,548,765 | 345,684,052 | 3,415,156,293 |
| 1960... | 1,721,143,162 | 4,499,284 | 1,677,209,478 | 3,098,765 | 148,021, 700 | 3,553,972,389 |
| 1961. | 1,744,673,266 | 4,499,273 | 1,670,653,176 | 2,423.765 | 184,593,150 | 3,586,842,630 |
| 1962. | 1,767, 978,925 | 4,499,261 | 1,630,895,308 | 2,423.765 | 209,026,793 | 3,614,822,052 |
| 1963. | 1,792,380, 188 | 4,485,785 | 1,878,875,000 | 2,023,764 | 410,354,762 | 3,588,119,490 |
| 1084. | 1,817,243,906 | 4,345,185 | 1,367,811,500 | 2,023,764 | 410,354,782 | 3,601,779,117 |
| 1965. | 1,843,209,298 | 4,345,185 | 1,366,061,500 | 2,023,764 | 410,354,762 | 8,625,994,509 |

In Table 11 the assets of the Canadian National Railway System as at Dec. 31, 1964 and 1965 are shown.

## 11.-Assets of the Canadian National Rauway System as at Dec. 31, 1964 and 1965

Norc.-Assets as at the time of consolidation of the system (Dec. 31, 1922) are given in the 1963-64 Year Book, p. 764

| Account | Dec. 31, 1964 | Dec. 31, 1905 | Account | Dec. 31, 1964 | Dec. 31, 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 5 | * |  | * | \$ |
| Current Assets...........Cash................Specisi deposits....... | $\begin{array}{r} \mathbf{2 2 6}, \mathbf{8 6 9 , 1 6 1} \\ 37,837,795 \\ 26,406 \end{array}$ | $\begin{array}{r} 252,586,015 \\ 30,210,047 \\ 26,369 \end{array}$ | Investments-concl Improvements on leased property |  |  |
|  |  |  |  | ${ }_{142,670,141}^{1,36484}$ | 147, $1,3388,6318$ |
| Trafic accounta receiv- | 3,254,405 |  | Noo-rail property |  |  |
| Agent amil cond |  | 2,752,377 | Investments in affiliated companies......... | 335,580 |  |
| balances....... | 48,109,500 | 54,582,813 | Other investment | 29,112,363 | 3,853,705 |
| Other ac | $27,386,834$ | , 193,969 | Deferred Assets......... |  | 27,511,771 |
| Government | $\begin{aligned} & 27,025,904 \\ & 61,599,783 \end{aligned}$ | 12,017,755 71,083, 427 | (e) |  |  |
| Msterial and supplies. <br> Interest and dividends recejvable Otber current assets. |  |  |  |  |  |
|  | $4,010,276$$17,558,258$ | $\begin{array}{r}2,98,87 \\ \hline 14,728,384\end{array}$ | Unadjusted Debits.... Prepayments. Discount on funded deb Other unadjusted debits | $\begin{array}{r} 23,154,787 \\ 2,327,563 \\ 17,358,514 \\ 9,468,660 \end{array}$ |  |
|  |  |  |  |  |  |
| Investments Road and equipment property. | $\begin{aligned} & 4,376,878,642 \\ & 3,939,523,826 \end{aligned}$ | 4,468,857,054 |  |  |  |
|  |  | 4,027,238,227 | Totals. | 4, $666,554,905$ | 4,778,04, ${ }^{\text {m }}$ |

The financial details presented in Table 12 are those of the entire Canadian National Railway System, including both Canadian and United States operations. Revenues and expenses include those of express and commercial communications and highway transport (rail) operations. In conformity with the requirements of the Uniform Classification of Accounts, tax accruals and rents are charged to operating expenses.
12.-Total Revenue, Operating Expenses, Net Revenue, Fixed Charges and Deficits of the Canadian National Lailway System (Canadian and United States Operations), 1956-65
Nors.- Figures for 1911-55 are given in the corresponding table of previous Year Books beginning with the 1936 edition.

| Year | Total Operating Revenue | Total Operating Expenses | Income Available for Fixed Charges | Total Fized Charges | Net Income or Deficit | Cash Deficit or Surplus ${ }^{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\leqslant$ | \$ | \$ | 8 | \$ | \$ |
| 1956 | 774,800,647 | 728,008,837 | 57,623,710 | 31,782,891 | Cr. 25, 840,719 | Cr. 20,076, 05513 |
| 1957. | 753.165,964 | 755,214,378 | 6,913,660 | 36,971,680 | Dr. 30,058,020 | Dr. $29,572,541$ |
| 1958 | 704,947, 410 | 719,211,865 | Dr. 4,779, 895 | 46,521, 236 | " 51,801,131 | 4 4 $51,591,424$ |
| 1959. | 740, 165, 041 | 741, 852,260 | 8,416,237 | 52,918,886 | " 44,502,649 | ${ }^{4}$ * $43,588,290$ |
| 1960. | 693,141, 106 | 705,818, 310 | 1,504,828 | $69,489,961$ | " 67,965,133 | " 67,498,777 |
| 1961 | 710,305, 778 | 722,147,583 | 5,539,970 | 73, 404, 523 | " 67,864, 55\% | " $67,307,772$ |
| 1962 | 738.324, 754 | $738,882,680$ | 23,308,683 | 74,443, 482 | ${ }_{4}{ }^{4} 51.134,799$ | " $48.919,454$ |
| 1963. | 762,350,334 | 752, 829,782 | 36,622,626 | 76,252,867 | $4 \quad 39,680,241$ | " $43,013,517$ |
| 1984. | 822,483,679 | 811,471,248 | 37, 888, 007 | 74,673,809 | $436,787,802$ | 4 38, 725.804 |
| 1965. | 870,250,352 | 855,687,971 | 43,547,754 | 73,808,456 | * 30,260,708 | 4 $33,414,884$ |

${ }^{1}$ Includes appropriations for insurance fund.
${ }^{2}$ Contributed by or paid to the Government of Canada. ${ }^{3}$ Paid to the Government of Canada as a dividend on 4 -p.c. preterred stock.

Mileage and Traffic.-At Dec. 31, 1965, the length of first main track owned by the Canadian National Railways (including electric lines and lines in the United States but excluding lines of the Northern Alberta Railways and Toronto Terminals Railway controlled jointly by the Canadian National and the Canadian Pacific Railways) was 24,265 miles.

## 13.-Train Traffe Statistics of the Canadian National Rallways (Canadian and United States Lines), 1963-65

Nore.-Inciudes electric lines.

| Mileage and Traffie | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: |
| Train Mileage. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . milies | 54,679,183 | 58,135,511 | c0,209,381 |
| Passenger service. | 17,079,631 | 18,348,088 | 19,842,789 |
| Freight service. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 35,796,950 | 38,240,893 | 38,978,560 |
| Wort service. | 1,802,601 | 1,546,532 | 1,388,032 |
| Passenger-Train Car Milleate ....................miles | 177,232,023 | 195,491,301 | 213,888,541 |
| Coachea and combination (exel. work bervice)... " | 41, 268,160 | 47.304,522 | 52,200, 423 |
| Motor unit cars. . . . . . . . . . . . . . . . . . . . . . . . . . . | 3,877, 880 | 3,952,648 | 4,175,168 |
| Parlour, Bleeping and dining cars................. | 49,022,660 | $64+319,706$ | 72,389, 721 |
| Baggage, mail, express, ete....................... | 83,063,317 | 79,914,425 | 85,118,229 |
| Freight-Train Car Mileage. . . . . . . . . . . . . . . . . . . miles | 1,965,622,868 | 2,110,254,347 | 2,148,550,148 |
| Loaded freight.................................. ${ }_{\text {. }}^{\text {a }}$ | 1, 181, 953, 889 | 1,265,929,716 | 1,287,931,072 |
| Empty freight | 746,854, 265 | 804.311,089 | 819,787,190 |
| Caboofe.. | 36,814,714 | 40,214,042 | 40,831,886 |
| Fork-Train Car Mileage. . . . . . . . . . . . . . . . . . . . . . miles | 2,869,521 | 2,651,373 | 2,786,107 |
| Passenker 'Trafic- |  |  |  |
| Pastengers carried (earning revenue)............ No. | 13,598,961 | 15, 500,649 | 17,414,270 |
| Passengers carried (earning revenue) one mile.... "* | 1,189,051,239 | 1,613,350,069 | 1,750,906,364 |
| Passenger-miles per mile of road. . . . . . . . . . . . . . | 1, 48, 121 | 1.65, 325 | 1,761,139 |
| Average passenger journey . . . . . . . . . . . . . . . . .miles | 87.4 | 104.1 | 100.5 |
| Average amount received per passenger.......... | 3.27 0.08730 | 3.34 0.03212 | 3.35 <br> 0.03332 |
| Freight'Tratic- |  |  |  |
| Revenue freight carried....................... tons | 84,078,398 | 92,632,736 | 99,204,609 |
| Revenue freight carried one mile............... "* | 40, 171,173, 489 | 44,516, 285, 706 | 46.180,503.687 |
| Revenue freicht carried one mile per mile of road " | 1,625,733 | 1,802,487 | 1,874,264 |
| Total (all clasaes) freight carried one mile per mile of road. | 1,649,226 | 1,821,400 | 1,894,521 |
| Average hauls, revenue freight....................miles | 477.8 | 480.6 | 485.0 |
| Grose ton-milea per ireight train hour. . . . . . . . . . . No. | 58,561 | ${ }_{6}^{69} 034$ | 59,638 |
| Freight revenue per ton. . <br> Freight revenue per ton-mile. | 6.57 0.01375 | $\begin{aligned} & 6.51 \\ & 0.01355 \end{aligned}$ | 6.44 <br> 0.01385 |

## Section 2.-Express Companies

There are five express organizations operating in Canada. The Canadian Pacific Express exists as a subsidiary of the Canadian Pacific Railway Company, and the express business of the Algoma Central and Hudson Bay Railway, the Canadian National Railway System and the Northern Alberta Railways Company is handled by departments of the respective railways. The Railway Express Agency Incorporated of the United States operates mainly over the Canadian sections of U.S. rail lines.

Express companies are organized under federal legislative authority. They are primarily engaged in the rapid transportation of package freight but their services also include custom brokerage, money orders, travellers cheques and other financial paper transactions. Recently, the major railways have introduced a unified service for handing small package express freight and less-than-carload-lot shipments, using the efficient facilities of their rail, piggyback and highway transport services to provide fast and competitive movement of goods. The eventual effects of this changing concept of express service will not be evident statistically until the integration processes are fully completed.

No statistics are available on the volume of express freight handled because much of it consists of parcels and small lots that cannot be classified. Table 14 shows the mileages operated by and the financial statistics of the express agencies for 1961-65 with figures by company for 1965.

## 14.-Summary Statisties of Express Companies, 1361-65

Nors.--Figures from 1911 are given in the corresponding table of previous Year Books beginning with the 1027-28 edition.

| Year or Compary | Mileages Operated in Cansdal | Gross Earnings | Opersting Expenies ${ }^{8}$ | Express Privileges ${ }^{2}$ | Net Operatios Revenue |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \$ | \$ | \$ | \$ |
| 1961. | 85.523 | 81.098.805 | 62,674.794 | 17,875,713 | 548,298 |
| 1982. | 70.885 | 83,877,337 | 64,086.906 | 19,041.953 | 748.478 |
| 1963. | 74.2934 | 79,031,998 | 62,127.111 | 16,157.030 | 737.857 |
| 1964. | 76,0254 | 81.728 .007 | 64.918 .242 | 16,162,703 | 647,062 |
| 1965. | 80.2654 | 85, 927,546 | 67,329,413 | 17,949,092 | 649,181 |
| 1965 |  |  |  |  |  |
| Algoms Central and Hudson Bay Rly. | 322 | 67.623 | 49.377 | 22,800 | Dr. 4,554 |
| Cansdian National Express. . . . . . . . . . | B0, 322 | 47.348 .653 | 37,143.470 | 9.715,687 | 493.586 |
| Canadian Pacific Exprees.............. | 16.659 | 31.988 .793 | 25.665 .947 | 6, 186.146 | 146.760 |
| Northern Alberta Railways........... | 1,841 | \% 245.218 | ${ }^{203.872}$ | 41.346 |  |
| Railway Express Agency, Lnc........... | 1,1214 | 6. 267.259 | 4,266,747 | 1,987,113 | 13,389 |

[^257]Business transacted by express companies in financial paper is showing a downward trend, declining from $\$ 140,519,846$ in 1961 to $\$ 135,659,423$ in 1965 . The latter was made up of: domestic and foreign money orders, $\$ 107,926,993$; C.O.D. cheques, $\$ 17,158,809$; travellers cheques, $\$ 10,522,794$; and telegraphic transfers, $\$ 50,827$. The major decrease was shown in the amount of money orders issued.

The number of persons employed by express companies has also decreased over the five-year period. Employment (full-time and part-time) was provided for 6,565 persons in 1965 , to whom $\$ 30,920,877$ was paid in salaries and wages; this compared with 10,454 employees in 1961, receiving $\$ 42,405,948$ in salaries and wages. Commissions paid dropped from $\$ 2,733,174$ to $\$ 1,684,263$ over the same period.

## PART 1II.-ROAD TRANSPORT*

Highways and motor vehicles are herein treated as related features of transportation. An introductory Section summarizes provincial regulations regarding motor vehicles and motor traffic.

## Section 1.-Provincial Motor Vehicle and Traffic Regulations $\dagger$

[^258]licence is renewable annually in Newfoundland, Prince Edward Island, Nova Scotia, Saskatchewan and the Northwest Territories; in Alberta and British Columbia it is renewable every five years; in New Brunswick, Quebec and Manitoba it is renewable every two years and, in Quebec, expires on the licensee's birth date; in Ontario a licence is issued on a three-year basis and expires on the licensee's birth date. Special licences are required for chauffeurs in all provinces except Newfoundland and in some jurisdictions special licences may be granted to those who have not reached the specified age.

Motor Vehicle Regulations.-All motor vehicles and trailers must be registered annually, with the payment of specified fees, and must carry two registration plates, one on the front and one on the back of the vehicle (one only for the back of trailers); in New Brunswick one licence plate is issued to be attached to the front of truck tractors and to the rear of all other vehicles; in Prince Edward Island one plate is issued for motorcycles, to be mounted on rear. In most provinces, in event of sale the registration plates stay with the vehicle but in Quebec, Manitoba, Saskatchewan and Alberta the plates are retained by the owner. In Nova Scotia, vehicles pass from owner to owner by due process of law and title must be secured before issue of plates and permit. A change of ownership of the vehicle must be recorded with the registration authority. However, exemption from registration is granted for a specified period (usually at least 90 days, except in Quebec where the maximum is $\mathbf{9 0}$ days, in British Columbia where it is six months and in Ontario where it is six months for vehicles from other provinces and three months for vebicles registered outside Canada) in any year to visitors' private vehicles registered in another province or a state that grants reciprocal treatment. Regulations require a safe standard of efficiency in the mechanism of the vehicle and of its brakes and stipulate that equipment include non-glare headlights, a proper rear light, a muffer, a windshield wiper, a rear-vision mirror, and a warning device.

Traffic Regulations.-In all provinces and territories, vehicles keep to the righthand side of the road. Everywhere motorists are required to observe traffic signs, lights, ete., placed at strategie points on highways and roads. The speed limit in Prince Edward Island, New Brunswick and Quebec is 60 miles an hour in daytime and 55 at night; in Manitoba and Alberta it is 60 in daytime and 50 at night, with the exception of a few selected sections of four-lane highway in Alberta and Manitoba where maximum speeds in excess of the foregoing may be authorized and posted. In Nova Scotia the limit is a "reasonable and prudent" speed, with a maximum of 60 miles an hour except where 65 miles an hour is authorized. In Ontario maximum speeds vary from 50 to 60 miles an hour, depending on type of highway. In the other provinces the maximum speed permitted is normally 50 miles an hour; in Saskatchewan and British Columbia where higher speed limits are in effect they are posted. Slower speeds are always required in cities, towns and villages, when passing schools and public playgrounds, at road intersections, railway crossings or at other places or times where the view of the highway for a safe distance ahead is in any way obscured. In almost all provinces, truck speed limits are at least five miles an hour below automobile speed limits. In all provinces and territories, accidents resulting in personal injury or property damage of $\$ 100$ or more must be reported to a police officer (in Nova Scotia to the Registrar of Motor Vehicles or to a police officer; in Quebec to the Motor Vehicle Bureau) and a driver involved must not leave the scene of an accident until he has rendered all possible aid and disclosed his name to the injured party.

Driver Licensing Controls.-All provinces and territories impose penalties for infractions of driving regulations, ranging from fines for minor iniractions to suspension of the operator's driving permit, impounding of the car (except in the Northwest Territories), or imprisonment for more serious infractions. In most provinces penalties have been linked to a driver-improvement program, the sim of which is to correct faulty driving habits, not to take drivers off the road. The most common driver-improvement program includes the demerit-point-system.

Safety Responsibility Legislation.-Each province has enacted legislation under this heading (sometimes referred to as financial responsibility legislation). In general, these laws provide for the automatic suspension of the driver's licence and motor vehicle permit of a person convicted of a serious offence (impaired driving, driving under suspension, etc.) or a person involved directly or indirectly in an accident who is not covered for thirdparty insurance at the time of the accident (except in Saskatchewan where a judgment must be rendered for damages). The suspension remains effective until any penalty or judgment has been satisfied and proof of financial responsibility for the future is filed; in British Columbia proof of financial responsibility for the future is not required if suspension is for accident only. In Quebec, Saskatchewan and the Yukon Territory, uninsured motor vehicles may be impounded following an accident of any consequence, i.e., an accident resulting in personal injury or death, or property damage in excess of $\$ 100$ ( $\$ 200$ in Saskatchewan). In Ontario, the non-resident motorist is not required to carry or produce any form of proof of insurance.

Although safety responsibility legislation has not been enacted in the Northwest Territories, under present requirements the owner of a motor vehicle resident in the Mackenzie Highway region must submit evidence of stipulated insurance coverage on such vehicle before he can obtain registration. In the Yukon Territory, proof of insurance must be supplied before vehicle licence is issued. When the insurance expires or is cancelled, vehicle licence plates must be returned to the Registrar of Motor Vehicles.

Unsatisfied Judgment Fund.-Legislation has been enacted in all provinces, except in Saskatchewan and in the Yukon and Northwest Territories, usually in the form of an amendment to the motor vehicle laws of the province or territory, providing for the establishment of a fund, frequently called an Unsatisfied Judgment Fund (in British Columbia, the Traffic Victims' Indemnity Fund), out of which are paid judgments awarded for damages arising out of motor vehicle accidents in the province which cannot be collected in the ordinary process of Iaw. In Newfoundland, Prince Edward Island, Nova Scotia, Quebec and British Columbia the fund is maintained by insurance companies. In all the other provinces, except Saskatchewan where insurance is compulsory, the funds are obtained by the annual collection of a fee from the registered owner of every motor vehicle or from every person to whom a driver's licence is issued. The fee does not exceed $\$ 1$ per annum except that Ontario and Alberta collect $\$ 20$ from each uninsured owner of a motor vehicle at the time of registration or transfer and Manitoba collects an additional $\$ 25$ from each uninsured owner at the time of registration. A feature of this legislation, which is contained in some provincial statutes, is the provision for the payment of judgments in 'hit-and-run' accidents. When these occur, if neither the owner nor the driver can be identifed, action may be taken against the Registrar of Motor Vehicles (the Minister of Finance in Newfoundland and the Administrator of the Motor Vehicles Accident Claim Fund in Alberta); any judgment secured against the responsible authority is paid out of the Fund. All of these laws contain a provision limiting the amount that can be paid out of the Fund on one judgment. In Newfoundland and Nova Scotia, the limits are $\$ 10,000$ for one person, $\$ 20,000$ for two or more persons injured in one accident and $\$ 5,000$ for property damage. In Nova Scotia and New Brunswick the limit is $\$ 35,000$ in respect of any one accident. In Prince Edward Island and Quebec the limit is $\$ 35,000$ for all damages in the same accident, subject to a deduction of $\$ 200$ from all damage to the property of others; damages resulting in bodily injury or death are, up to $\$ 30,000$, payable by priority over damages to property and the latter are, up to $\$ 5,000$, payable by priority over the former out of the amount of any insurance or other guarantee of indemnity. In British Columbia, the limit is based on the single amount of $\$ 50,000$ for any one accident
with the proviso that not more than $\$ 5,000$ may be paid on a property damage claim until injury claims up to $\$ 45,000$ have been satisfied; the $\$ 35,000$ limit exists for hit-and-run accidents but does not apply to payments for property damage. In Ontario and Alberta, the limits are $\$ 35,000$ for death or personal injury to one or more persons and $\$ 5,000$ for damage to property, subject to a limit of $\$ 35,000$ in any one accident. In Manitoba, the limit based on one accident is $\$ 35,000$, with judgments arising out of bodily injury or death having priority to the extent of $\$ 30,000$ over claims resulting from loss of or damages to property; and judgments arising out of loss of or damage to property having priority to the extent of $\$ 5,000$ over judgments resulting from bodily injury or death; the maximum amount payable for a single judgment resulting from loss of or damage to property is $\$ 3,000$ subject to a deduction of $\$ 200$. In other provinces, lower limits of $\$ 5,000, \$ 10,000$ and $\$ 1,000$ are retained. For hit-and-run accidents payments are made for personal injuries only.

Sources of information on provincial motor vehicle and traffic regulations:-

## Newfoundland

Administration.-The Minister of Finance, St. John's.
Legislation.-The Highway Traffic Act, 1962 (amended 1964).

## Prince Edward Island

Administration.-The Provincial Secretary, Charlottetown.
Leoislation.-The Highway Traffic Act (SPEI 1964, c. 14).

## Nova Scotia

Administration.-Registry of Motor Vehicles, Department of Highways, Halifax.
Legislation.-The Motor Vehicle Act (1954, c. 184, as amended) and the Motor Carrier Act (1958, c. 7, as amended).

## New Brunswick

Administration.-Motor Vehicle Branch, Department of Provincial Secretary, Fredericton. Legislation.-The Motor Vehicle Act (RSNB 1955, as amended).

## Quebee

Administration.-Motor Vehicle Bureau, Department of Transportation and Communications, Parliament Bldgs., Quebec.
Legislation.-The Highway Code (RSQ 1941, c. 142 and 142A, as amended).

## Ontario

Administration.-Ontario Department of Transport, Toronto.
Legislation.-The Highway Traffic Act (RSO 1960, c. 172, as amended), the Public Vehicles Act (RSO 1960, c. 337, as amended), the Public Commercial Vehicles Act (RSO 1960, c. 319, as amended) and the Motor Vehicle Accident Claims Act (1961-62, c. 84, as amended).

## Manitoba

Administration.-Minister of Public Utilities, Winnipeg.
Legislation.-The Highway Traffic Act (SM 1966, c. 29) and The Unsatisfied Judgment Fund Act (SM 1965, c. 89).

## Saskatchewan

Administration.-Highway Traffic Board, Revenue Building, Regina.
Legislation.-The Vehicles Act, 1965.

## Alberta

Administration and Legislation.-The Vehicles and Highway Traffic Act (RSA 1955, c. 356) and the Motor Vehicle Accident Claims Act (SA 1964, c. 56) are administered by the Motor Vehicle Branch, Department of Highways, Edmonton. The Public Service Vehicles Act (RSA 1955, c. 265) and the Rules and Regulations are administered by virtue of authority vested in the Highway Traffic Board, Department of Highways, Edmonton.

## British Columbia

Administration and Legislation.-Enforcement of the Motor Vehicle Act, the Commercial Transport Act and the Motor Carrier Act is vested in the Royal Canadian Mounted Police and the various municipal police forces. The Motor Carrier Act is administered by the Public Utilities Commission, the Motor Vehicle Act by the Superintendent of Motor Vebicles and the Commercial Transport Act by the Minister of Commercial Transport, Victoria, B.C.

## Yukon Territory

Administration.-Commissioner of the Yukon Territory, Whitehorse, Y.T. Information regarding regulations may also be obtained from the Registrar of Motor Vehicles, Government of the Yukon Territory, Whitehorse, Y.T.
Legislation.-The Motor Vehicles Ordinance (Revised Ordinances 1958, e. 77, as amended).

## Northwest Territories

Administration.-Commissioner of the Northwest Territories. Address communications to the Deputy Commissioner of the Northwest Territories, 400 Laurier Ave. West, Ottawa,
Legislation.-The Motor Vebicle Ordinance (Revised Ordinances of the Northwest Territories. 1956, c. 72, as amended).

## Section 2.-Highways, Roads and Streets

Highways and Roads.-The populated sections of Canada are well supplied with highways and roads. Access to outlying settlements is provided to some extent by roads built by logging, pulp and paper, and mining companies, although these are not generally available for public travel. At the same time, great areas of Newfoundland, Quebec, Ontario, the Prairie Provinces, British Columbia and the Territories are very sparsely settled and are virtually without roads of any kind.

At the end of 1965 the mileage of highways and rural roads in Canada was 448,378, an increase of 9,512 miles over the 438,866 reported in 1964 . The 448,378 miles include all roads under provincial jurisdiction, federal roads, and local roads under municipal jurisdiction other than the mileages in census metropolitan areas and urban centres of more than 1,000 population. The latter are given separately under the heading of "Urban Streets", p. 807

## 1.-Highway and Rural Road Mileage classifled by Type and by Province, 1965 with Totals for 1964

Note.- Exeludes urban streets but inciudes mileages under jurisdiction of rural and small arban municipalities;
excludes mileages of all roads on Indian reservations except those of flexible pavement.

| Classification | Nff. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. ${ }^{1}$ | Alta. | B.C. | Y.T. and N.W.T. | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | miles | miles | miles | miles | miles | miles | miles | miles | miles | miles | miles | miles |
| Surfaced $\qquad$ Rigid pavement Fiexible pavement. . Gravel. | 4.786 | 2.649334 | 9,3987 | 13,114 | 45, 189 | 79,5592,081 | 29,058 | 55,370 | 59,580 | 27, 5989 | 2,445 | 328,28416,040 |
|  |  |  |  |  |  |  |  |  |  | 18 |  |  |
|  | $\begin{aligned} & 1,007 \\ & 3,771 \end{aligned}$ | 9051.401 | $4.016$$5,373$ | $\begin{array}{r} 1.803 \\ 11,311 \end{array}$ | 1,02330,800 | $\begin{aligned} & 27,151 \\ & 50,847 \end{aligned}$ | $\xrightarrow{2,844}$ | 50,435 | [4,966 | 6,49714,083 | 2,441 | -85,751 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| Earth............ | 552 | 668 | 6,123 | - | 9.674 | 3.476 | 13,958 | 69,781 | 14,348 | 7,426 | 91 | 125,488 |
| Totals, $1965 .$. | 5,332 | 3,308 | 15.519 | 13.114 | 54,863 | 83, 035 | 43, 017 | 125.751 | ${ }^{73} 8.878$ | 28, | 2.538 | 448,378 438,866 |
| 1984. . | 5,387 | 3, 329 | 15,428 | 13.114 | 50.424 | 78, 183 | 38,487 | 124,961 | 72,788 | 28, 268 | 2,498 | 438, 8.6 |

${ }^{1}$ Includes road allowances.
Expenditure on bighways and rural roads in the year ended Mar. 31, 1965 totalled $\$ 1,100,600,000$, an amount 19.5 p.c. higher than that for the previous fiscal year; construction expenditures increased by 23.3 p.c. and maintenance costs by 9.3 p.o.

## 2.-Construction, Maintenance and General Expenditure on Highways, Rural Roads, Bridges and Ferries, by Province, Years Ended Mar. 31, 1964 and 1965

| Item and Province or Territory | 1964 | 1985 | Item and Province or Territory | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ 000 | \% 000 |  | \$'000 | \$000 |
| Construction | 811,648 | 754,439 | Administration and Generall... | 55,502 | 68, 396 |
| Newfoundland | 24,723 | 43,462 | Newfoundland................. | 577 | 647 |
| Prince Edward Island | 8,070 | 8,66B |  | 84 | 266 |
| Nova Scotia. | 16,237 | 19,858 | Nova Scotia.................... | 1,671 | 1,905 |
| New Brunswi | 20,574 | 27,030 | New Brunswick | 1,066 | 1,536 |
| Quebec. | 165,818 | 254,052 | Quebec... | B,515 | 7,214 |
| Ontario. | 181,237 | 214,238 | Ontsrio. | 35,006 | 43,352 |
| Manitoba | 25,287 | 30,602 | Manitoba. | 3,466 | 3,663 |
| Saskatchewan | 33,075 | 38.230 | Saskatchewan | 1,858 | 3,106 |
| Alberta. | 55,506 | 53,259 | Alberta | 846 | 874 |
| British Columbia | 78,675 | 62,370 | British Columbia | 3,910 | 4,711 |
| Yukon and N.W.T | 4.496 | 4+672 | Yukon and N.W.T | 303 | 1,123 |
| Majuterance. | 254,079 | 277,794 | Totals . | 821,229 | 1,100,429 |
| Newfoundland. | 10.169 | 11,125 |  |  |  |
| Prince Edward Island | 2,880 14,768 | 2,749 $\pm$ $\pm 3,816$ |  |  |  |
| New Brunswlick | 13,428 | 13,634 | ribution of mpenditure- |  |  |
| Quebec. | 73.748 | 76,446 | Federal | 84.251 | 132.138 |
| Ontario | 69,881 | 72,814 |  |  |  |
| Manitobs. | 7.112 | ${ }_{8}^{8}+075$ | Provincial. | 744,627 | 874,143 |
| Saskatchewan | 12,840 | 12,718 |  |  |  |
| British Columbia | 25.304 | 31,267 |  |  |  |
| Yuton and N.W.T. | 1,733 | 12,951 | Other | 4.909 | 2.881 |

${ }^{1}$ Includes federal administrative costs re Trans-Canada Highway amounting to $\$ 200,000$ in $\mathbf{1 9 6 3 - 6 4}$ and $\$ 190,000$ in 1964-65.

Federal-Provincial Road Assistance Programs.-There are various programs existing between the Federal Government and the provinces relating to highway and road construction, the co-ordination of which is the responsibility of the federal Minister of Transport who reports to Parliament on federal road policy. When major programs of assistance have been decided upon, their implementation is undertaken either by the Department of Public Works or by the sponsoring Department.

The Trans-Canada Highway.-The original federal-provincial agreement for construction of the Trans-Canada Highway is given in outline, together with data on specifications and route across the participating provinces, in the 1951 Year Book, pp. 631-634. Construction progress and changes in legislation are reported in subsequent editions.

Under the Act, which became effective Dec. 10, 1949, agreements covering the Federal Government's participation in the cost of construction were entered into with each of the provinces. Construction standards were set and the date of completion fixed. The shortest practicable east-west route was to be designated by each province within its own borders, in agreement on terminal points with adjoining provinces, and those sections within the National Parks were to be the responsibility of the Federal Government. Later amendments to the Act increased the extent of federal financial participation and extended the period in which construction costs might be incurred under the Act to Dec. 31, 1967.

Although construction was still going on in a number of sections, the closing in 1962 of the last major gap-in the Rocky Mountains-made it possible for the first time to drive the entire length of the 4,860 -mile route. The Trans-Canada Highway was officially opened on Sept. 3, 1962. Provincial mileages are approximately as follows: Newfoundland, 540; Prince Edward Island, 71; Nova Scotia, 318; New Brunswick, 390; Quebec, 399; Ontario, 1,453; Manitoba, 309; Saskatchewan, 406; Alberta, 282; and British Columbia, 552. Length through the National Parks totals 140 miles.

Up to Mar. 31, 1966, contractual commitments for new construction on the Highway amounted to $\$ 997,960,434$, of which the federal share was $\$ 625,000,000$. Federal payments
to the provinces for prior, interim and new construction totalled $\$ 573,249,165$. Paving to specified standards had been completed over a distance of 4,139 miles and 841 bridges, overpasses and other structures of more than 20 -foot span had been or were being constructed.

Roads to Resources.-The Roads to Resources Program is a national undertaking designed to provide access to areas potentially rich in natural resources. Negotiations, commenced in 1958, led to agreements being signed with all ten provinces that will eventually result in the construction or recoastruction of more than 4,700 miles of road. Progress of the program to Mar. 31, 1966 was as follows:-

| Province | Estimaled Total Cost | Value of Approved Contracts | Provincial Expenditure | Federa! Contribution | Total Mileare | Miloogo Completed |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000,000 | \% 000,000 | \$ 0000,000 | \$ 000,000 | No. | No. |
| Newfoundland..... | 16.06 | 15.56 | 11.77 | 4.90 | 322 | 270 |
| Prince Edward Is... | 15.00 | 17.07 | 12.92 | 6. 46 | 447 | 389 |
| Nova Seotia ..... | 16.34 | 15.14 | 14.88 | 7.44 | 492 | 406 |
| New Brunswick. .. | 20.56 | 18.07 | 13.97 | 6.00 | 425 | 263 |
| Quebec............ | 13.79 | 15.47 | 13.79 | 6.94 | 248 | 172 |
| Ontario............ | 21.86 | 17.84 | 15.65 | 6.66 | 562 | 325 |
| Manitoba............ | 14.37 | 15.86 | 14.76 | 7.38 | 693 | 334 |
| Saskatehewan...... | 23.88 | 16.37 | 12.96 | 6.48 | 811 | 419 |
| Alberta ${ }_{\text {British }}$ Columbia. | 20.38 20.50 | 15.09 | 14.83 | ${ }_{6} 7.41$ | ${ }_{4}^{416}$ | 337 <br> 185 |
| British Columbia... | 20.50 | 15.00 | 13.72 | 6.86 | 321 | 185 |
| Totals.... | 182. 54 | 159.47 | 189.25 | 66.54 | 4,738 | 3,100 |

As the statement shows, the total estimated cost in most provinces exceeds $\mathbf{\$ 1 5 , 0 0 0 , 0 0 0 ,}$ the amount sharable under the agreement, but the federal contribution to each province will remain at $\$ 7,500,000$. Private industry shares in the cost of certain roads where construction is of most direct benefit to the company concerned. In any province, the program may consist of as many projects as can qualify for inclusion and for which funds are available. In most provinces, the majority of the roads being built under the program are intended for the purpose of opening up regions to primary resource development and exploration. In Prince Edward Island and Nova Scotia, on the other hand, a number of routes have been chosen for their tourist potential.

Development Roads.--The Development Road Program in the Yukon Territory and the Mackenzie District of the Northwest Territories is distinet from the Roads to Resources Program in that the Federal Government is responsible for construction; in the Roads to Resources Program, the contribution of the Federal Government is wholly financial. Maintenance costs of Roads to Resources are borne by the provinces but northern roads costs are shared by the Federal and Territorial Governments on an $85-15$ basis. In the Yukon Territory, approximately 1,300 miles of development roads, constructed at a cost of about $\$ 30,000,000$, were in use in $1965-66$; in the Northwest Territories and Wood Buffalo National Park, about 750 miles costing about $\$ 29,000,000$, were in use by the end of March 1966.

In late 1965, a new ten-year road-building program in the Yukon and Northwest Territories was announced, calling for an average expenditure of $\$ 10,000,000$ a year, an amount double the annual roads investment in the previous ten-year period. This is the first phase of a 20 -year roads network program which should bring all potential areas of resource development in the Territories within 200 miles of the nearest permanent road and thus gradually reduce the North's dependence on seasonal transportation for bulk shipments, reduce the cost of holding large inventories and, as the program progresses, bring the cost of living more in line with that in other parts of Canada. In addition, improved access should result in substantial growth of the tourist industry.

An immediate result of the new program is the speed-up of construction now under way on the 165 -mile highway from just south of Hay River to Fort Smith. Also forming part of the new program is the 127 -mile area development road being constructed from

Ross River to Carmacks in Yukon Territory. This road is of special interest to tourists since it will provide a route from Watson Lake on the Alaska Highway to and through Carmacks and Dawson, and onward to the Alaska border where it will connect with the State of Alaska Highway System.

Under the previous program, the Federal Government offered to build and pay for mine development roads where two or more companies were developing a mineralized region, and to assist with the cost of mine-access roads and tote-trails. Even so, about 10 p.c. of present exploration and development spending by private industry, which is in excess of $\$ 25,000,000$ a year, is spent merely on gaining access to properties. The more extensive road network visualized by the new program, combined with increased federal aid for certain types of access roads, will make it possible for private industry to delegate more capital to actual exploration work.

Types of roads and proportion of federal assistance under the new program are as follows:-

Permanent Access Roads-to lead from the nearest permanent road to a resource development about to produce; federal assistance may be up to two thirds of the cost but may not exceed 15 p.c. of the capital invested by a company before commercial production or exploitation.
Communication and Network Roads-to provide connecting links between the territories, the provinces, and population centres within the territories; construction and 85 p.c. of maintenance costs will be paid by the Federal Government.
Area Development Roods--to lead into resource-potential areas; construction costs will be paid by the Federal Government and maintenance shared by the Federal and Territorial Governments.
Initial Access Roads (tote-trails)--low-standard winter or year-round roads to provide an established resource project with access to a network road; federal assistance may be up to 50 p.e. of the cost of the road, which will be maintained by its primary user.
Roads to Public Airports (land or water)-to connect airports with the nearest network or local road; construction and 85 p.c. of maintenance will be paid by the Federal Government.

Construction and Improvement of Trunk Highways in the Atlanfic Provinces.-This program, announced in February 1965, involves an expenditure by the Federal Government of $\$ 30,000,009$ over a three-year period to be financed from special appropriations to the Atlantic Development Board. The additional appropriations enable the Board to continue and expand a program of highway assistance begun in 1964 when $\$ 10,000,000$ was allocated from the Atlantic Development Fund to meet pressing trunk highway needs in the Atlantic region. Expenditures approved and funds disbursed by the Atlantic Development Board under this program up to Mar. 31, 1966 are included in the statement of approvals and expenditures by the Board for all purposes in Chapter XXIV, Sect. 7 .

Urban Streets.-Information on urban streets is obtained from the local administrations of all areas with populations over 1,000 , all areas located within census metropolitan areas, improvement districts over 1,000 population and rural municipalities over 15,000 population. Brief statistical data are given in Table 3; more detail may be obtained from DBS annual report Road and Street Mileage and Expenditure (Catalogue No. 53-201).

## 3.-Statistics of Urban Streets, 1964 and 1965

| Item | 1984 | 1985 |
| :---: | :---: | :---: |
| Total Brpenditure Reported . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . $\mathbf{s}^{0} 000$ | 283,015 | 329,308 |
| New construction.............................................." | 144,343 | 165,738 |
| Reconsucton, repair, cleaning, banding, buow |  |  |
| Total Urban Mileage.................................................. No. No. | 42,177 | 44,312 |
| Rigid pavement................................................................................................. |  | 7,073 20,882 |
| Gravel and other sufaces.................................................... "f | 14,133 | 14,370 |
| Earth................................................................ | 1,983 | 2.037 |

${ }^{1}$ Includes erpenditures on sidewalks, footpaths, bridges and ferries.

## Section 3.-Motor Vehicles

Motor Vehicle Registrations.-Registrations continue to increase year by year, a record of $6,698,778$ being reached in 1965 . Of that total, $5,279,373$ were passenger carsone for every 3.7 persons. Registrations by province are given in Table 4 and types of vehicles registered by province in Table 5.

## 4.-Motor Vehicles Registered, by Province, 1956-65

Norc.-Registrations given bere include passenger cars, trucks, buses, motorcycles, pervice cars, etc., but not trailers or dealer licences. Figures ior 1904-55 are given in the corresponding table of previous Year Books beginning with the 1937 edition.

| Year | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Total ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| 1958 | 45,997 | 23, 373 | 157, 544 | 111,315 | 844,827 | 1,710,240 | 240,008 | 291,265 | 381,153 | 454, 217 | 4,265, 437 |
| 1957 | 47,982 | 23.725 | 164,286 | 116,712 | 901, 065 | 1,793,499 | 246,188 | 300,326 | 405,228 | 491,884 | 4,497,091 |
| 1858 | 51,575 | 25,501 | 164, 954 | 121,715 | 968,058 | 1,868,922 | 256.064 | 314,423 | 430,081 | 515, 244 | 4,723,825 |
| 1959 | 51,145 | 27,502 | 189,435 | 129,829 | 1,010,366 | 1,973,737 | 269.974 | 326,690 | 458,458 | 545,491 | 5,017, 686 |
| 1960 | 61, 952 | 30,147 | 187,065 | 138,469 | 1,096,053 | 2,062,484 | 285, 889 | 335,148 | 486,370 | 564,351 | 5,256,341 |
| 1961 | B5, 270 | 32,166 | 206, 691 | 145,951 | 1,183,978 | 2,126,270 | 299, 998 | 349,817 | 509, 298 | 588, 280 | 5, 517,028 |
| 1962 | 74, 119 | 33,886 | 205.370 | 151,360 | $1,281,180$ | 2, 177, 148 | 312,272 | 372,219 | 535,459 | 620,420 | 5,774,810 |
| 1963 | 79,422 | 35.314 | 212,034 | 156,768 | 1,381, 801 | 2,268,320 | 324,806 | 382,190 | 560,490 | 662,453 | 6.074, 04.5 |
| 1964 | 87,990 | 35.032 | 222,827 | 165,311 | 1,441,201 | 2,381,219 | 339, 509 | 396,742 | 583,713 | 716,644 | 6,382,033 |
| 1985 | 92, 885 | 33,849 | 233, 653 | 174,428 | 1,480,743 | 2,516,680 | 342,335 | 418,606. | 606,754 | 786,310 | 6,698,778 |

1 Includes registratione in the Yukon and Northwest Territories; in 1965, they numbered 7,132 and 5,408, respectively.
5.-Types of Motor Vehicles Registered, by Province, 1944 and 1965

| Year and Province or Territory | Passenger Car8 | Commercial Сагя, Trucks, ete. ${ }^{3}$ | Buses | Motorcycles | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. |
| 1964 |  |  |  |  |  |
| Newfoundland. | 85,384 | 22,001 | 365 | 240 | 87,990 |
| Prince Edward Island | 24,823 | 10,586 | 11 | 142 | 35,062 |
| Nova Scotia. | 169,490 | 51.284 | 1,147 | 896 | 222,827 |
| New Brunswick | 130.468 | 33,227 | 732 | 889 | 165,311 |
| Quebec. | 1,115,023 | 301,824 | 9,763 | 14,591 | 1,441,201 |
| Ontario | 2,028,528 | 334,759 | 7,598 | 10,334 | 2,381,219 |
| Manitoba. | 258,076 | 79,206 | 198 | 2,029 | 339, 509 |
| Saskatehewan. | 259,919 | 135, 532 | , 249 | 1,042 | ${ }_{383}^{396,742}$ |
| Alberta......... | 408,382 | 163,447 | ${ }_{3}^{4,060}$ | 7,824 | - 388,713 |
| British Columbia ................ | 571,807 6,466 | 135,825 5,149 | ${ }^{3} 66$ | 9.012 | 718,044 11,815 |
| Canada, 1861. | 5,037,861 | 1,272,850 | 24,189 | 47,133 | 6,383,03s |
| 1965 |  |  |  |  |  |
| Newfoundland. | 69,900 | 22,155 | 380 | 450 | 92,885 |
| Prince Edward Island. | 25,796 | 7,843 | 10 | 200 | 33,849 |
| Nova Seotia. | 178,389 | 51, 896 | 1,219 | 2,149 | 233.853 |
| New Brunswick | 137, 137 | 34,475 | 752 | 2,064 | 174,438 |
| Quebec.... | 1,145,785 | 307.630 | 10,742 | 16,586 | 1,480,743 |
| Ontario. | 2,139,696 | 344,519 | 8,305 | 24,070 | 2,516, 385 |
| Manitoba...... | ${ }^{260}{ }^{267} 771$ | 148, 026 | ${ }_{869}$ | 2,540 | 418,506 |
| Alberta. | 424,217 | 169,379 | 4,188 | 8.970 | 606,754 |
| British Columbi | 623,742 | 149,192 | $\because$ | 13,376 | 786, 310 |
| Yukon and Northwest Territories. | 6.601 | 5,559 | 89 | 286 | 12,535 |
| Canada, 1965 | 5,279,373 | 1,319,198 | 26,240 | 75,367 | 6,698,778 |

1 Includes taxis.
2 Includes service cars, road tractors, etc.

[^259]Apparent Supply of Automobiles.-The apparent supply of automobiles in Canada in any year is computed by deducting the number exported from the sum of the production and imports. Statistics regarding retail sales and the financing of motor vehicle sales are given in Chapter XXI on Domestic Trade and Prices.
6.-Apparent Supply of New Automobiles, 1955-64

| Year | Cars Made for Sale in Canada |  | Car <br> Imports |  | Re-exports of Imported Cars |  | Apparent <br> Supply |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Passenger | Commercial ${ }^{1}$ | Passenger | Commercial | Passenger | Commercial | Passenger | Commercial ${ }^{1}$ |
|  | No. | No. | No. | No. | No. | No. | No. | No. |
| 1955. | 349,306 | 69,186 | 48,546 | 9,403 | 22 | 24 | 397,830 | 78,565 |
| 1956. | 349,809 | 85,094 | 76,200 | 13,032 | 45 | 42 | 425, 964 | 98,084 |
| 1957. | 318,416 | 64,857 | 70,796 | 9,215 | 65 | 39 | 389,147 | 74,033 |
| 1958. | 280,677 | 55,908 | 104,195 | 9,182 | 190 | 8 | 384,682 | 65,082 |
| 1959. | 285,841 | 63,429 | 153,932 | 11,632 | 549 | 6 | 439, 224 | 75,055 |
| 1960. | 307,499 | 66,293 | 170,653 | 9,376 | 179 | 56 | 477, 973 | 75, 613 |
| 1961. | 312,599 | 60,332 | 106,865 | 9,487 | 700 | 35 | 418,764 | 69,784 |
| 1962. | 412,120 | 78,094 | 94,655 | 4,413 | 194 | 67 | 506,581 | 82,440 |
| 1963. | 513,785 | 93,912 | 59,634 | 3,193 | 391 | 38 | 573,028 | 97,067 |
| 1964. | 520,743 | 104,446 | 92,490 | 3,160 | 1,277 | 17 | 611,956 | 107,589 |

${ }^{1}$ Includes Armed Forces vehicles.
Provincial Government Revenue from Motor Vehicles.-The taxation of motive fuels, motor vehicles, garages, drivers, chauffeurs, etc., is an important source of provincial government revenue. In every province licences or permits duly issued by the provincial authorities are required for motor vehicles of all kinds, trailers, operators or drivers, paid chauffeurs, dealers, garages and gasoline and service stations. In 1965 the average cost per motor vehicle for operating taxes and licences was about $\$ 137$.

The more important sources from which provincial revenue from motor vehicles is derived are shown in Table 7. Motive fuel tax rates are given in the Public Finance Chapter, Section 2, Subsection 2 on Provincial Taxes; Federal Government revenue from excise and sales taxes is given in the same Chapter, Section 3, Subsection 3 on Revenue from Taxation.

## 7.-Provincial Revenue from the Registration and Operation of Motor Vehicles, by Province, Years Ended Mar. 31, 1965 and 1966

| Year and Province or Territory | Passenger Automobile Licences | Truck, Bus, Trailer and Other Vehicle Licences | Motorcycle Licences | Chauffeur, Driver and Dealer Licences | Public Service Tax | Motive <br> Fuel <br> Taxes | Total ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1964-65 | \$ | \$ | \$ | \$ | § | \$ | 8 |
| Newfoundland. | 1,127,293 | 1,563,719 | 3,231 | 406,761 | 494 | 9,399,789 | 12,906,354 |
| Prince Edward Island. . | 454,304 | 367,514 | 517 | 92,408 | 700 | 3,309,324 | 4,242,806 |
| Nova Scotia. | 3,355,386 | 2,996,780 |  | 471,915 | 113,392 | 21,992, 203 r | 29,402,459 r |
| New Brunswic | 3,038,288 | 2,474,865 | 4,291 | 399,996 |  | 18,190,997 | 24,481,572 |
| Quebec | 25,350, 850 | 23,193,257 | 58,364 | 4,282,508 | 1,604,055 | 166, 038,702 | 222,596,386 |
| Ontario... | $40,395,378$ $4,225,089$ | $38,550,328$ $3,725,055$ | 112,454 8,611 | $2,454,9623$ 163,1504 | 4,087,640 $1,284,234$ | $233,188,417$ 31,697 31,040 | 323,091, 027 |
| Saskatchewan | 3,899,966 | 4,547, 871 |  | 526,499 |  | 31,697,040 | 41, 432,528 |
| Alberta. | 6,075, 867 | 8,485,123 | 6 | 440,310 | 229,087 | 39, 970 , 255 | 56, 569,358 |
| British Columbia | 11,260,795 | 9,835,515 | 39,059 | 952,887 | 350,959 | 50, 508,823 | 73, 913,914 |
| Yukon and N.W.T | 76,383 | 100,693 | 413 | 28,016 | 95,840 | 722,363 | 1,075,970 |
| Canada, 1964-65... | 99,269,599 | 95,840,730 | 226,940 ${ }^{7}$ | 10,219,412 | 7,766,401 ${ }^{7}$ | 606,638,135 | 831,790,308 ${ }^{\text {r }}$ |

[^260]
## 7.-Prorincial Revenue from the Registration and Operation of Motors Vehicles, by Province, Years Ended Mar. 31, 1965 and 1966-concluded

| Year and Province or Territory | Paasenger <br> Automobile Licences | Truck, Bus, Trailer and Other Vehicle Licences | Motorcycle Licances | Chaufieur, Driver and Dealer Licences | Public Service Tax | Motive Fuel Taxes | Total ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1965-6¢ | \$ | \$ | \% | \$ | * | \$ | \$ |
| Newtoundland........ | 1,209,403 | 1,882,567 | 3,457 | 439,360 | 456 | 11,974,477 | 15,809,209 |
| Prince Edward Island. . | 480, 291 | 382,635 | 710 | 97,381 | 600 | 3,546,470 | 4,529,594 |
| Nova Scotia. | 3,657,772 | 3,214,672 |  | 491,526 | 124,205 | 24,778,878 | 32,822,643 |
| New Brunswick | 3,190,441 | 2,718,377 | 9,687 | 412,508 |  | 20,130,088 | 26,911,058 |
| Quebec. | 26,055,770 | 25,352,496 | 66,344 | 4, 953,666 | 1,731,158 | 100,982,103 | 251,388, 190 |
| Ontario | 43,611,434 | 39,486,262 | 323,757 | 4,899,695 ${ }^{2}$ | 4,124,416 | 251,501,969 | 348, 854, 193 |
| Manitobs. | 5,337, 079 | 4,311,331 | 16.596 | 2, 172, 3604 | 1,355,938 | 39, 429,932 | 53, 447, 299 |
| Saskatchewan | 3,919,780 | 4.936.220 |  | 544,714 |  | 30,014, 895 | 40,521,226 |
| Alberts | 6,380,369 | 8,966, 831 | ${ }^{6}$ | 454.959 | 212,713 | 43, 113,875 | 60,652, 006 |
| British Columbia | 12,155,293 | 10,716,827 | 68,196 | 1,517,923 | 358.786 | 55,756,091 | 81,876,348 |
| Yution and N.W. | 74,169 | 92,460 | 964 | 29,522 | 92,957 | 743,366 | 1,091,283 |
| Canada, 1965-66. | 106,021,801 | 101,760,278 | 481,711 ${ }^{3}$ | 16,013, 114 | 8,001,223: | [71,972,144 | 917,708,749 |

${ }^{1}$ Includes other items not shown such as transfer of motor vehicles, garage and service station licences, and fines for infractions of motor vehicle laws. ${ }^{2}$ Incladed with other motor vehicles. ${ }^{2}$ I Licences issued on three-year basis. "Licences issued on two-year basis. "Included with miscellaneoue revenues and therefore in total. $\quad$ Included with psssenger automobiles. ${ }^{5}$ Not complete.

Sales of Motive Fuels.-In order to estimate the total amount of motive fuel purchased in Canada for use in motor vehicles on public streets and highways, it has beed necessary to eliminate from the total the amount of motive fuel used for other purposes. Thus, from the total or gross sales, including imports and exports, the following are subtracted to obtain net sales: tax exempt sales to the Federal Government and other consumers, exports, and sales on which refunds were paid. Net sales are thus defined as sales on which a tax or taxes have been paid in full and are considered to approximate the actual amount of motive fuel purchased in Canada for use on public streets and highways. As shown in Table 8, consumption of taxable gasoline, which is used almost entirely for automotive purposes, rose 7.8 p.c. in 1965 and net sales of diesel oil 23.4 p.c.

## 8.-Sales of Motive Fuels, by Province, 1s61-65

| Province or Territory | 1961 | 1962 | 1963 | 1964 | 1985 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Gagoline and Liqucpted Petrolevm Gases |  |  |  |  |
|  | gal. | gsil. | gal. | gal. | gal. |
| Newfoundland. | 38, 929,486 | 42,326,939 | 46,158,513 | 51,205, 828 | 59,214,001 |
| Prince Edward Island | 18,098,741 | 18,964,066 | 19,687,378 | 20,753,975 | 21,625,345 |
| Nova Scotis...... | 111,462,514 | 117,994, 058 | 122,355,774 | 129,977,561 | 136,170,762 |
| New Brunswick | 85,569.848 | 89,144, 726 | 92,485,963 | 99,370, 660 | 107.558,614 |
| Quebec. | 788,429,327 | - 843,642,435 | 899,756,445 | $938,822,568$ $+594,284,845$ | $1,060,362,285$ $\mathbf{1}, 673,758,797$ |
| Ontario. | 1,446,057.743 | 1,511,424, 379 | $\begin{array}{r}1,477,127,028 \\ 222,604 \\ \hline\end{array}$ | $\begin{array}{r}1,594,284,845 \\ \hline 225 \\ \hline\end{array}$ | $1,673,758,797$ $-232,410,100$ |
| Maskitoba... | $202,098,314$ $272,422,024$ | $213,294,660$ $295,985,892$ | 222,694, 3148 | $225,783,740$ $318,863,410$ | 351,479,362 |
| Alberta. | 522,792,671 | 565, 553, 393 | 422,082,1291 | 439,543,671 | 457,092,775 |
| British Columbia | 352, 133,881 | 361,164,628 | 380,461,856 | 422,975, 817 | 441, 806, 409 |
| Yukon and N.W.T | 6,282,885 | 6,870,923 | 7,764,476 | 8, 478,347 | 8,739,575 |
| Totals, Gross Sales | 3,844,277,442 | 4,046,346,099 | 4,045,424,080 | 4,254, 059,422 | 4,550,217,*85 |
| Refunds and exemptions. | 735,098,287 | 809,440,450 | 565,077,175 | 548,683,750 | 560,903,911 |
| Totals, Net Sales. | 3,109,181,145 | 3,256,925,44 | 3,440,346,305 | 3,701,375,572 | 3,389,314,074 |

[^261]8.-Sales of Motive Fuels, by Province, 1861-65-concluded

| Item | 1961 | 1962 | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Disget ont |  |  |  |  |
| Totals, Net Sales. | $\begin{aligned} & \mathrm{gal} . \\ & 143,042,427 \end{aligned}$ | $\begin{aligned} & \text { gal. } \\ & 153,570,625 \end{aligned}$ | $\begin{aligned} & \text { gal. } \\ & \text { 193,180,457 } \end{aligned}$ | gal. 210,642,160 | $\begin{aligned} & \mathrm{gal} . \\ & 255,943,441 \end{aligned}$ |

Motor Carriers-Freight.*-Statistics of the common carrier segment of the intercity and rural motor carrier industry have been collected on a continuing basis since 1941. However, as little capital is required to enter the trucking business, many marginal operators are associated with the industry and the large turnover and numerous changes each year have created many problems in the collection of statistics, although these are gradually being overcome. Statistics of contract carriers are available from 1958.

[^262]
## 9.-Stummary Statistics of Motor Carriers-Freight, 1963 and 1964

| Item | Common |  | Contract |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 1963 | 1964 | 1968 | 1964 |
| Cartiers Reporting............................ . No. | 3,208 | 2,884 | 1,356 | 1,496 |
| Property Actount-Fired Assets (motor carrier husiness) | 324,704,056 | 322,064,565 | 70,539,329 | 82,727,064 |
| Operating Revenues <br> Freight- | 442,003, 007 | 463,025,745 | 82,439,395 | 34,313,328 |
| Intercity and rural. ......................... | $428,758,048$ $5,145,878$ | $445,308,953$ $6,785,166$ | $77,841,222$ $1,965,331$ | $90,545,134$ $1,711,438$ |
| Other.......................................... | 8,099,081 | 10,921,626 | 2,632,842 | 2,056,756 |
|  | $415,335,544$ $56,132,200$ | $435,814,377$ $57,672,243$ | $74,945,887$ $12,615,178$ | $86,305,832$ $15,035,482$ |
| Wages of drivers and helpers. | 86.734,895 | 91,075,676 | 17,028, 184 | 20,059,501 |
| Other (fuel, insurance, fuel tazes, rents and depreciation). | 165,604,118 | 171,154,626 | 31,916,593 | 35,345,456 |
| Lisence experse................................ | 14.016,062 | 14,313,539 | 2,690,303 | 3,136,874 |
| Administration and general..................... \$ | 92,848,269 | 101,598,293 | 10,695,599 | 12,728,518 |
| Net Operzting Revenues. .................... \% | 26,667,463 | 27,211,3¢8 | 7,493,558 | 8,007,496 |
| Fuel Consumed-Gasolinu...............................000 zal.Diesel oil.............................Liquefied petroleum gases................... "/ |  |  |  |  |
|  |  |  | 23,286 | 25,116 |
|  | 37,230 157 | 42,008 | 6.835 85 | 9,049 27 |
| Employees- |  |  |  |  |
| Average employed during year............... No. | 32,558 | 32,337 | 5.256 | 5.741 |
| Total talaries and wages....................... | 152,846,145 | 180,590,674 | 23,601,592 | 27,939,965 |
| Working proprietorn.,........................ ${ }^{\text {a }}$ No. Withdrawals of working proprietors......... | 7, ${ }^{2,412}$ | 7, 2,248 | + $\begin{array}{r}1,146 \\ 4,354,256\end{array}$ | 4, 1, 107 |
| Witadrawals of working proprietors., ......... \% | 7,005,699 | 7,053,208 | 4,354,256 | 4,311,477 |
| Equipment- |  |  |  |  |
| Tracks with gasoline engipes. . . . . . . . . . . . . . No. | 11,406 | 12,035 | 3,592 | 3.427 |
| Truckn with diesel engines.................... "A | 7171 | 7190 | 196 | 207 |
| Road tractors with easoline engines. | 7.779 | 7.594 | 1,540 | 1,578 |
| Road tractors with diesel engines.............. " | 3,391 | 3.841 | 649 | 832 |
|  | 17,252 1,809 | 18,912 | 2,498 | 2,900 |
| Trailers..................................... * | 1,809 | 1,244 | 435 | 577 |

Household Goods Movers and Storage Operators.*-Statistics of household goods movers and storage operators, summarized in Table 10, were first presented separately in 1960; before that date, they were included either with motor carriers-freight or with warehousing, depending upon the predominant source of operating revenues of the companies concerned.
10.-Summary Statistics of Household Groods Movers and Storage Operators, 1964-64

| Item | 1980 | 1961 | 1962 | 1963 | 1984 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Companies Beporting.................. No. | 163 | 19\% | 153 | 227 | 288 |
| Investment In Land, Warthouses, Vehleles, ete. | 18,016,538 | 24,506,043 | 28,861,344 | 36,529,532 | 33,888,214 |
| Revenues................................ | 30,982,777 | 34,315,516 | 38,482,035 | 45,860,927 | 45,565,248 |
| Cartage. | 21,882,082 | 24,329,327 | 25,980,439 | 31,052,341 | 30,532,243 |
| Storage................................... \$ | 4,374,983 | 4,758,767 | 5,816,373 | 6,552,230 | 5,558,646 |
| Packing.................................... \$ | 3,116,592 | 3,605,636 | 3,546,449 | 4.101,846 | 4,615,712 |
| Other.................................. \$ | 1,589,120 | 1,621,785 | 3,138,774 | 4,154,510 | 4,858,647 |
| Operating Expenses..................... \$ | 30,324, 443 | 33,547,487 | 36,526,348 | 44,051,416 | 43,395,684 |
| Maintenance. | 2,226,563 | 2,426,787 | 2,835,251 | 3,224,772 | 3,206, 190 |
| Salaries and wages (charged to operations) \$ | 9,925,306 | 10,692,026 | 10,917,519 | 13,209,333 | 13,935,847 |
| Cartace expenses. | 1,884,625 | 2,269,976 | 2,607,760 | 3,790,376 | 3,332,249 |
| Storage expenses. | 2,384,414 | 2,505,279 | 2,378,408 | 2,602,250 | 2,641,829 |
| Other operating expenge9................. \$ | 13,903,081 | $15,653,419$ | 17,787,412 | 21,224,685 | 20,279,519 |
| Net Operating Revenues................ | 638,728 | 768,029 | 1,955,487 | 1,809,511 | 2,169,614 |
| Employees- |  |  |  |  |  |
| Average employed daring year. ........ No. | 3,658 | 3,906 | 4,064 | 4,790 | 4,450 |
| Salaries and wages...................... \$ | 13,701,805 | 14,937,657 | 16,220,976 | 19,758,876 | 19,355,843 |
| Storage Capacity- |  |  |  |  |  |
| Household goods. . . . . . . . . . . . . . . . . . . . . cu. ft. | 27,372,708 | 30,235,601 | 31,217,234 | 36,303,850 | $33,888,412$ |
| Other, . . . . . . . . . . . . . . . . . . . . . . . . . . . . ${ }^{\text {a }}$ | 1,793,810 | 4,049,382 | 5,345,366 | 9,725,781 | 7,650,548 |
| Vehicles- |  |  |  |  |  |
| Trucks................................. . No. | 1,302 | 1.437 | 1,578 | 1,874 | 1,718 |
| Traotors. . . . . . . . . . . . . . . . . . . . . . . . ${ }^{\text {. }}$ | 850 | 672 | 741 | 824 | 797 |
| Semi-trailera............................ * | 647 | 711 | 780 | 803 | 867 |
| Trailers.............................. | 40 | 38 | 59 | 169 | 28 |

Passenger Buses. $\ddagger$-The operations of companies predominantly engaged in passenger bus service are summarized in Table 11. Data refer to the for-hire segment of the industry and only those firms engaged in intercity and rural operations and having an annual gross revenue of $\$ 6,000$ or over are covered. Operators predominantly involved in the provision of school bus service are not included nor are airport servicing and urban transit bus operators.

[^263]
## 11.-Summary Statistics of Intercity and Rural Passenger Bus Companies, 1961-65

Notr.-Only carriers with an annual gross revenae of $\mathbf{5 6 , 0 0 0}$ or over are included.

| Item | 1961 | 1962 | 1983 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Carrlers Repertinc....................... No. | 161 | 159 | 166 | 165 | 102 |
| Property Account-Fixed Assets......... * | \$6,489, 820 | 70,436,779 | 76,252,205 | 75,007, 887 | 78,864,251 |
| Bevtnues................................ | 53,122,514 | 57,057,805 | 61,236, 860 | *3,170, 601 | 68,841,256 |
| Regular Passenger ServiceIntercity and rural | 42,969,210 | 45,051,213 | 47,960,347 | 47,945,483 | 52,304, 349 |
| Urban and suburb | 743.346 | 688,019 | 879,221 | 752, 607 | 891,354 |
| Chartered service......................... \$ | 4,722,831 | 6,125.050 | 6,597, 127 | 7,498, 220 | 8,068,519 |
| Other transportation revenue............. \% | 4,686,627 | 5,195,523 | 5,800,165 | 6,974,391 | 7,577,024 |
| Operatiog Fipenses | 49,060, 485 | 51,845,161 | 55,725,517 | 67,782, 444 | 61,737,884 |
| Maintenance. | 9.208,151 | 10,927,855 | 11,212,351 | 11,270,499 | 11,573,622 |
| Wages and bonuses of drivers and helpers. | 12.321, 120 | 13.388,754 | 14,624,688 | 14,875,560 | 16, 343,963 |
| Other transportation expense | 10,318,002 | 10,677,733 | 11.675,266 | 11,512,062 | 12,851,723 |
| Operating tayes and licences | 4,322,054 $12.890,908$ | 4.237,632 | ${ }^{4} 4.486,626$ | 15,658,792 | 4,573,880 |
| Other operating expenses. | 12,890,908 | 12, 613,187 | 13,716, 088 | 15,465,531 | 16,394,696 |
| Net Operating Repenues.................. | 4,062,273 | 5,212,644 | 5,511,343 | 5,388,157 | 7,103,372 |
| Trafific and Employees-PaspengeraRemular Routes- |  |  |  |  |  |
| Intereity and rural. .................. No. | 54,052,706 | 50,591,148 | 48,638,373 | 48,648,418 | 45,606, 246 |
| Urbap and suburban.................. | 5.401,687 | 4,756,342 | 5,019,002 | 4,671,884 | 4,570, 831 |
| Special and chartered ser | 4,834,020 | 6,347,173 | 6,382,415 | 8, 121,076 | 8,504,753 |
| Regular Routes- |  |  |  |  |  |
| Intercity and rural. . . . . . . . . . . . . . . . No. | 88,424,751 | 90,753,096 | 93, 443,880 | 94, 124,250 | 90,704,870 |
| Urban and suburba | 1,642, 072 | 1,664,367 | 1,881,933 | 1,712,294 | 2,062,317 |
| Special and caarte | 8,128,367 | 10,049,231 | 11,385,383 | 12,009,902 | 12,203,870 |
| Gapoline consumed ................... gal. | $5,080,177$ $8,118,152$ | $4,501,251$ $8,908,848$ | 4.134, 529 $10,328,872$ | $3,703,651$ $\mathbf{9 , 7 1 2 , 9 1 6}$ | 3,677,222 |
| Employees- | -118, 152 |  | 10,328,872 | 9,812,916 | 11,040,793 |
| Average employed during year........ No. | 5,049 | 4,662 | 4.724 | 4,650 | 4.738 |
| Total salaries and wages............... W | 22,891,346 | 22,197,171 | 23,736, 153 | 23,984,134 | 25, 854, 648 |
| Working proprietors. . . . . . . . . . . . . . . . . . . . No. Withdrawals of working proprietors. | $\begin{array}{r} 57 \\ 173,681 \end{array}$ | 150.38 1588 | $140.663$ | $117,859$ | 152,718 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| Gasoli | 1,496 | 1,191 | 1,144 | 1,089 | 1,086 |
| Diesel | 845 | 1,208 | 1,3is | 1,644 | 1,686 |

Motor Transport Traffic.*-Motor transport traffic in all provinces has been surveyed on a continuing basis since 1957. Quarterly sample selections resulted in about 7 p.c. of total registrations being sampled in 1964 compared with 10 p.c. in 1963 , the decrease reflecting a 40 -p.c. reduction effected in the sample selection; each quarterly sample was spread over three survey weeks with one third of the sample being used for a seven-day period (Sunday through Saturday) per month. Another change instituted in 1964 was the elimination of the urban operations of all trucks, except for miles travelled and amount of fuel used. Table 12 therefore contains for 1963 only the items that are comparable with those for 1964 which are based on the new concept.

Excluding vehicles that do not perform normal transportation services such as cranes, tow trucks, road-building equipment, etc., and government vehicles, the estimated number of trucks licensed in Canada in 1964 was $1,033,000$. Almost 30 p.c. were registered in Ontario and vearly one half were registered in the two Provinces of Ontario and Quebec.

Although for-hire trucks made up only 6 p.c. of the total registrations, they accounted for 73.8 p.c. of the net ton-miles performed by all commercial highway trucks because of the greater distances travelled by this type of vehicle and the heavier loads carried; their average yearly mileage was 25,800 compared with 7,100 for all trucks and their average

[^264]load was 12.9 tons compared with 8.1 tons for all trucks. The predominance of heavier vehicles in the for-hire group also explains why their mileage per gallon of gasoline was only 5.6 compared with an average of 8.8 for all vehicles.

Private intercity vehicles accounted for 21.2 p.c. of the total registrations and for 24.1 p.c. of the total net ton-miles performed; their average yearly mileage was 10,400 , average load 4.7 tons, and mileage per gallon of gasoline 9.7 Private urban vehiclea made up 39.7 p.c. of the total truck population. Almost three quarters of these vehicles were registered in the three Provinces of Ontario, Quebec and British Columbia.

Farm trucks accounted for 33.1 p.c. of the commercial vehicle registrations but, of course, for only a small portion of the total net ton-miles performed. More than three quarters of all trucks registered in Saskatchewan and half of those registered in Manitoba and Alberta were used in farm operations; approximately 70 p.c. of all farm trucks in Canada were registered in the Provinces of Ontario, Saskatchewan and Alberta.
12.-Estinated Truck Population and Truck Traffle, by Type of Operation, 19*3 and 1964

| Year and Item | For-Hire | Private |  |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Intercity | Urbar | Farm |  |
| 1963 |  |  |  |  |  |
| Truck Population (estimated)- |  |  |  |  |  |
| Atlantic Provinces | 1,767 | 30.179 | 34,511 | 12,543 | 79,000 |
| Quebec.............................. " | 17,809 20,600 | 38.566 67,084 | 107,034 188,989 | 38,200 71,927 | 201,600 298,060 |
| Manitoba. ........................... * | 1.600 | 3,500 | 29,600 | 35,700 | 70,400 |
| Saskatchewan | 1,700 | 8,657 | 15,843 | 86,400 | 112,600 |
| Alberta. | 10,200 | 23,248 | 24,252 | 77,500 | 135,200 |
| British Columbia | 6,900 | 31,477 | 52,863 | 12.450 | 103,700 |
| Totals, Truck Population...... No. | 69,567 | 202,711 | 403,492 | 334,730 | 1,001,100 |
| Miles Travelled- |  |  |  |  |  |
|  | 31.8 361.0 | 281.4 582.9 | 160.1 | 44.9 112.7 | 518.2 $1,758.8$ |
| Ontario. | 511.5 | 708.6 | 760.5 | 238.0 | 2,216. 5 |
| Manitoba | 81.8 | 48.9 | 210.7 | 84.3 | 440.8 |
| Saskatchewan | 74.4 | 97.3 | 74.7 | 233.9 | 480.3 |
| Alberta. | 267.9 | 258.5 | 1404 | 282.1 | 948.9 |
| British Columbia | 165.4 | 268.5 | 251.0 | 44.1 | 72.0 |
| Totals, Miles Trafelled . . . . . . . ' 0 e0,0\%0 | 1,508.9 | 2,196.1 | 2,349.6 | 1,088.4 | 7,092.4 |
| Miles per gallon of gasoline.............. No. | 6.0 | 9.7 | 10.7 | 12.7 | 8.5 |
| 1394 |  |  |  |  |  |
| Truck Population (estimated)- |  |  |  |  |  |
| Atlantic Provinces.................... No. | 2,360 | 31,190 | 38,035 | 13,615 | 85,200 |
| Quebec........................................ | 20,400 | 76,879 | 134,803 | 62,418 | 294.500 |
| Manitobs | 1,500 | 3,500 | 33, 400 | 39,500 | 77,000 |
| Saskatchewan, | 1,600 | 9,659 | 14,441 | 90,300 | 116.000 |
| Alberta. | 10,100 | 24,450 | 26,650 | 82,400 | 143,600 |
| British Columbia, . . . . . . . . . . . . . . . . . | 7,800 | 34,401 | 52,614 | 13,485 | 108,300 |
| Totals, Truek Population...... No. | 61,760 | 219,357 | 415,365 | 341,518 | 1,433,000 |
|  |  |  |  |  |  |
| Atlantic Provinces..................... ${ }^{\text {' } 000,000}$ | 38.9 379.0 | 276.6 492.9 | 180.3 829.5 | 41.8 | 1,816.6 |
|  | 529.9 | 837.7 | 803.8 | 194.4 | 2.365 .9 |
| Manitobs | 81.5 | 48.9 | 214.6 | 78.6 | 423.6 |
| Saskatchewan.......................... | 62.7 | 113.7 | 74.7 | 182.9 | 434.0 |
|  | 297.8 201.5 | 238.2 272.9 | 147.6 252.2 | 245.8 61.7 | 929.4 |
| British Columbis. ................... |  |  |  |  |  |
| Trotak, Miles Travelied. . . . . . . ' $\mathbf{0 0 0 , 0 6 0}$ | 1,591.3 | 2,280.9 | 2,502.8 | 929.5 | 7,205.5 |
| Miles per gallon of gasoline.............. No. | 5.6 | 9.7 | 8.5 | 10.6 | 8.8 |
| Average weight of goods carried.......... ton | 12.9 | 4.7 | . | 1.3 | 8.1 |
| Average net ton-miles per truck.......... No. | 205, 100 | 18,800 | . | 1,000 | 27.600 |
| Capaeity utilized....................... p.e. | 488.4 | 39.6 5650 | .. | 621.9 | 50.8 67,200 |
| Average gross ton-miles per truck........ No. | 442.500 | 55,500 |  | 6,900 | 67,20 |

Urban Transit Systems.-The collection of statistical information on urban transit systems has been extensively reorganized in recent years because of major changes made in the types of vehieles used for mass passenger movement in urban centres. The current series, which was started in 1956, includes operations of motor buses, trolley coaches, streetcars and subway cars carrying passengers in urban and suburban service.

## 13.-Summary Statistics of Urban Transit Systems, 1961-65

| Item | 1081 | 1962 | 1963 | 1964 | 1985 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 987,317,185 | 995,165,878 | 988,147,638 | 994,239,184 | 385,144,844 |
| Motor bus..................... | 631,202,883 | 643,307,389 | 665,481,904 | 690, 881,295 | 678,017,653 |
| Trolley coac | 175,491,958 | 172,487,505 | 149.996,752 | 133,197,665 | 130,414,203 |
| Streetcar. | 138,585,305 | 136,550,846 | 125,937,437 | 122,023,961 | 124,787, 132 |
| Subway ca | 32,993,117 | 32,874,696 | 36.491,918 | 38,055,729 | 41,373.620 |
| Chartered................... | 9,046,092 | 9,949,942 | 9, 168, 657 | 9,662,154 | 10,332,887 |
| Intercity and rural services (all types of vehicles). | \% | \% | 1,070,970 | 418,380 | 239,485 |
| Vehlcle-milles Run............ No. | 198,537,893 | 202,445,808 | 208,121,10y | 212,84,969 | 213,779,508 |
| Motor bus. | 134,363,690 | 138,252,679 | 142,779,355 | 150,113,461 | 152,806,059 |
| Trolley coach | 32,899,859 | 32,862,744 | 32,390,625 | 28,748,408 | 27,654,912 |
| Streetcar. | 21,441,041 | 21,240,370 | 20,302,402 | 20,118,497 | 19,912,282 |
| Sobway car.................. ${ }_{\text {\% }}^{\text {a }}$ | 7.018.476 | 6,951,856 | 8,967,566 | 9.474 .168 | 9,644, 797 |
| Chartered................... ${ }^{*}$ | 2,814,767 | 3,138, 157 | 2,985,243 | 3,628,719 | 3,495,176 |
| Intercity and roral services (all typee of vehicles). | 2 | : | 745,916 | 721,656 | 266,277 |
| Fuet Consumed- |  |  |  |  |  |
| Diesel oil. . . . . . . . . . . . . . . . . . gal. | 17,266,159 | 18,385,972 | 19,820,960 | 20,713.770 | 23,149,602 |
| Gasoline. . . . . . . . . . . . . . . . . . . . ${ }^{\text {, }}$ | 9,108,194 | 9,096,746 | 9,388,808 | 8,874,984 | 7,565,509 |
| Liquid petroleum | 834,170 | 188,000 | 313,202 | 277,333 | 256,069 |
| Pessthger Vehicles in Serviee.. No. | 7,228 | 7,386 | 7,509 | \%.641 | 7,939 |
| Motor bus. | 5,081 | 5,267 | 5,432 | 5,609 | 5,774 |
| Trolley cosch | 1,174 | 1,170 | 1,167 | 1.122 | 1,098 |
| Streetcar | 833 | 791 | 740 | 740 | 735 |
| Subway car. | 140 | 158 | 170 | 170 | 334 |
| Finances- |  |  |  |  |  |
| Total saseta................... 8 | 285,697,114 ${ }^{2}$ | 292,158,071 ${ }^{\text {2 }}$ | 298,479,381 ${ }^{3}$ | 262,078,164 ${ }^{2}$ | 288,415,768 |
| Long-term debt. . . . . . . . . . . . | 176,600,938 ${ }^{3}$ | 179,674,576 ${ }^{\text {a }}$ | 188.892,505 ${ }^{3}$ | 145,993,895 | 161,536,125 |
| Capital stock and surplus ...... | 74,209,868 ${ }^{\text {b }}$ | 74,991,464 ${ }^{3}$ | 75,679,476 ${ }^{\text { }}$ | 80, 824,236 ${ }^{\text {4 }}$ | 82,278,931: |
| Operatiug revenues ............ \$ | 138,440,041 | 141,608,500 | 142,451,128 | 151,851, 862 | 164,054,532 |
| Operating experses............. \$ | 137,257, 702 | 141,620.749 | 146,280,067 | 151,389,907 | 166, 745,551 |
| Ratio of erpenses to revenues. . p.c. | 99.14 | 100.01 | 102.70 | 99.70 | 98.38 |
| Employees................... No. | 18,100 | 18,157 | 18,182 | 17,961 | 18,645 |
| Salaries and wagea ............. \% | 85,008,940 | 88,145,600 | 90,839,804 | 95,759,397 | 106,345,817 |

${ }^{1}$ Initial revenue passenger fares, exchuding transfers.
${ }^{2}$ Included in other items.
${ }^{3}$ Ercludes British Columbia Hydro and Power Authority.

There are two subway systems in operation in Canada. The Toronto subway was officially opened on Mar. 30, 1954 when 13.33 miles of track were placed in service and later additions brought the length of track to 18.25 miles by Dec. 31, 1965. The first 10 miles of a 16 -mile addition under construction since 1963 were completed early in 1966 and the remaining six miles are scheduled for operation in December 1967. The Montreal subway went into public use on Oct. 17, 1966, with an over-all track length of 12.96 miles.

Motor Vehicle Traffic Accidents.-There were 398,127 motor vehicle traffic accidents reported in 1965 compared with 363,033 in the previous year. Deaths from such accidents continue their upward trend, numbering 4,652 in 1964 and 4,902 in 1965 as against 2,972 in 1955. Statistics for 1965 , reported by place of occurrence, are given by province in Table 14 but it should be noted that, although motorists are required by law to report accidents, complete statistics of these accidents are not available for all provinces. According to DBS vital statistics data, reported on a different basis, there were 4,961 deaths from motor vehicle traffic accidents in 1965.

## 14.-Motor Vehicie Trafic Accidents, by Province, $19 * 5$

| Item | Nfd. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | $\begin{gathered} \text { Y.T. } \\ \text { n.W.T. } \end{gathered}$ | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No, | No. | No. | No. | No. | No. |
| Accidents Eeported. | 6,497 | 1,556 | 12,286 | 9,732 | 13t, 144 | 128, 468 | 15,714 | 15,768 | 38,201 | 40,262 |  | \#8,127 |
| Fatal............... |  | 24 |  | 182 | 1,318 | 1.318 | 132 |  |  | 421 |  | 4,070 |
| Non-fatal . . . . . . . . | 1,409 | - 402 | 2,382 | 2,602 | 26,356 | 41,047 | 5,067 | 4,272 15 | 5, 425 | 11,557 |  | 100, 680 |
| Property damagel.. | 5,024 | 1,130 | 9,668 | 6,948 | 102,470 | 86,097 | 10,515 | 15,330 | 27,524 | 28,284. | 387 | 293,377 |
| Persons Killed | 72 | 25 | 209 | 244 | 1,541 | 1,611 | 178 | 223 | 381 | 500 |  | 4,942 |
| Drivers. | 16 | 9 | 77. | 61 | 499 | 598 | 73 | 87 | 158 | 189 |  | 1,765 |
| Passengers. | 22 | 7 | 55 | 57 | 488 | 564 | 63 | 96 | 131 | 178 |  | 1,655 |
| Pedestrians. | 31 | ${ }^{8}$ | 69 | 80 | 485 | 387 | 30 | 28 | 33 | 102 | 1 | 1,254 |
| Bicyelists........... | 3 | 1 | - | 5 | 65 | 39 | , | 4 | , | 10 | - | 138 |
| Motorcyelists and passengers. Others. | - | - | 2 | - ${ }^{1}$ | 9 | 21 | 4 | 1 | ${ }^{7}$ | 25 1 | 二 | 70 20 |
| Persons Injured..... | 2,011 | 008 | 3,387 | 3,908 | 39,109 | 60,917 | 7,309 | C,926 | 8,598 | 17,574 | 257 | 150.612 |
| Drivers. . . . . . . . . . | , 555 | 246 | 1,180 | 1,535 | 11,034 | 25.603 | 3,248 | 2,933 | 3,391 | 6,940 | 104 | 56,769 |
| Passengers. | 783 | 284 | 1,406 | 1,657 | 17,475 | 25,013 | 3,061 | 3,309 | 3,952 | 8,088 | 123 | ${ }^{65,151}$ |
| Pedestrians......... | 602 | 66 | 673 | 527 | 8,076 | 6.740 | 574 | 400 | 743 | 1,449, | 12 | 10, 862 |
| Bjcyclists.......... | 35 | 8 | 77 | 108 | 1,838 | 1,505 | 166 | 117 | 178 | 418 |  | 4,541 |
| Motorcyclists and passengers. Others | 14 22 | 4 | $\stackrel{5}{9}$ | 60 21 | 686 | 1.888 77 | 198 62 | 145 | $\begin{gathered} 286 \\ 66 \end{gathered}$ | 648 31 |  | 3,979 310 |
| Total Property Damate.... \$'000 | 3,048 | 678 | 5,786 | 4,884 |  | c9,117 | \$,187 | 9,268 | 15,879, | 些,608 |  | 187,821 |

${ }^{1}$ All reported accidenta are those resulting in property damage estimated at $\mathbf{\$ 1 0 0}$ or over.
2 Excludes Quebec.

## PART IV--WATER TRANSPORT*

The Canada Shipping Act.-Legislation regarding all phases of shipping is consolidated in the Canada Shipping Act (RSC 1952, c. 29). Under the Act and its amendments the Parliament of Canada accepts full responsibility for the regulation of Canadian shipping.

## Section 1.-Shipping Facilities and Traffic

## Subsection 1.-Shipping

All Canadian waterways including canals, lakes and rivers are open on equal terms, except in the case of the coasting trade, to the shipping of all countries of the world so that Canadian shipping must compete with foreign flag shipping.

Within the region from approximately Havre St. Pierre on the St. Lawrence River upstream to the head of the Great Lakes, the carriage of goods or passengers from one Canadian port to another Canadian port, commonly known as the coasting trade, is restricted to ships registered in Canada. Elsewhere in Canada, the coasting trade is open to all Commonwealth ships.

[^265]Canadian Registry.-Under Part I of the Canada Shipping Act, ships in excess of 15 tons net register and pleasure yachts in excess of 20 tons net are required to be registered; ships of lower tonnage may be registered voluntarily, otherwise they are required to be operated under a Vessel Licence if powered by a motor of 10 hp . or more. Sect. 6 of the Act restricts ownership to British subjects or bodies corporate incorporated under the law of a country of the Commonwealth or of the Republic of Ireland and having their principal place of business in those countries. Under the British Commonwealth Merchant Shipping Agreement, all Commonwealth ships are given the general designation 'British Ship', and a ship that should be but is not registered is not entitled to the privileges accorded to British ships. Ships in the planning stage or in course of construction may be recorded before registry by a Registrar of Shipping at one of the 75 Ports of Registry in Canada.

## 1.-Vessels on the Canadian Shipping Registry, by Province, as at Dec. 31, 1963-65

Nors.-Figures from 1935 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

| Province or Territory | 1963 |  | 1964 |  | 1965 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Ships | Gross <br> Tonnage | Ships | Gross <br> Tonnage | Ships | Gross Tonnage |
|  | No. | No. | No. | No. | No. | No. |
| Newfoundland. | 810 | 82,784 | 849 | 88,735 | 884 | 103,308 |
| Prince Edward Island. | 779 | 20,219 | 819 | 20,922 | 922 | 21,515 |
| Nova Scotia. | 6,600 | 155,388 | 6,943 | 166,439 | 7,259 | 176,273 |
| New Brunswick. | 2,232 | 91,936 | 2,326 | 116,092 | 2,480 | 122,125 |
| Quebec...... | 2,780 | 892,466 | $\stackrel{2}{2,912}$ | 919,936 | 2,999 | 1,013,820 |
| Ontario. | 2,462 | 917,653 | 2,465 | 914,475 | 2,485 | 1,009,927 |
| Manitoba.... | 109 | 17,586 | 119 | 19,657 | 114 | 19,085 |
| Saskatchewan. | - 12 |  | 1 | 108 | 1 | 108 |
| Alberta. | 712 |  | $7{ }^{12}$ | ${ }^{686}$ | $7{ }^{12}$ | 686 |
| British Columbia | 7,006 | 678,598 | 7,266 | 709,662 | 7,569 | 798,994 |
| Yukon Territory | 6 | 1,435 | 6 | 1,435 | 6 | 1,435 |
| Totals. | 22,796 | 2,858,746 | 23,718 | 2,958,147 | 24,731 | 3,267,276 |

Shipping Traffic.-Table 2 shows the number and tonnage of all vessels (except those of less than 15 registered net tons, naval vessels and, for 1962-65, fishing vessels) entering Canadian customs and non-customs ports. Previous to 1957, only the international coastwise movement of cargo in and out of customs ports was recorded.
2.-Vessels Entered at Canadian Ports, 1957-65

| Year | In International Seaborne Shipping |  | In Coastwise Shipping |  | Totals |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Vessels | Registered Net Tons | Vessels | Registered Net Tons | Vessels | Registered Net Tons |
|  | No. | No. | No. | No. | No. | No. |
| 1957. | 35,352 | 66,149,552 | 104,079 | 76,535,160 | 139,431 | 142,684,712 |
| 1958. | 30,710 | 57, 738, 034 | 100, 234 | 76,197,625 | 130,944 | 133,935, 659 |
| 1959. | 33,251 | 67,526,464 | 110,702 | 85, 536,408 | 143, 953 | 153, 062,872 |
| 1960. | 33,397 | 74,805,002 | 120.125 | 88,493,116 | 153,522 | 163,298,118 |
| 1961. | 31,832 | 77,140,524 | 115,339 | 91,157,708 | 147, 171 | 168, 298, 232 |
| 1962. | 30,269 | 81,942,501 | 112,325 | 87,767,018 | 142,594 | 169,709,519 |
| 1963. | 29,169 | 87, 385, 238 | 107, 232 | 87, 257,470 | 136,401 | 174,642,708 |
| 1964. | 29,803 | 92,799,912 | 105,186 | 91,007,726 | 134,995 | 183,807,638 |
| 1965. | 28,792 | 98, 128, 231 | 99,153 | 89,363, 142 | 127,945 | 187,491,373 |

## 3.- Cargoes Loaded and Unloaded at Principal Canadian Ports from Vessels in International Seaborne and Coastwise Shipping, by Province, 1965 with Totals for 1964

Norz.-Only ports handling over 300,000 tons are listed.

| Province and Port | International |  | Coastwise |  | Total 1965 | Total 1964 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Losded | Unloaded | Loaded | Unloaded |  |  |
|  | tons | tons | tons | tons | tolis | tons |
| Newfoundla | 2,667,468 | 975, 974 | 1,263,509 | 2,023,674 | ¢,930,325 | 7,107,349 |
| Bell Ialand | 1,152+306 | 110 | 185,788 | 18,365 | 1,356,568 | 1,453,325 |
| Corner Br | 381, 145 | 203.308 | 23.869 | 452,260 | 1,070.582 | 1,171,068 |
| St. John' | 42,232 | 235,829 | ${ }_{1}^{47.347}$ | 474, 64 | 800.048 | 1.004.605 |
| Holyrood. | 1,472 | 293,528 | 230,861 | 134.2485 | 586,336 526,36 | 351,226 |
| Port aux Bas | 475 | 210 | 41,101 | 355,816 | 397, 602 | 366,519 |
| Stephenville. | 293,049 | 32,311 | 5,841 | 7,080 | 338.281 | 200.303 |
| Frince Edward Island. | 62,744 | 119,028 | 103,710 | 308,385 | 593,857 | 553,436 |
| Charlotetown....... | 12,678 | 106.955 | 88,151 | 278.494 | 487,278 | 453,844 |
| Nova Scotia | 6,694,955 | 4,511,791 | 3,858,685 | 1,518, 176 | 16,979,597 | 17,575,134 |
| Halifax | 2,812. 532 | 4,032,062 | 2,105.070 | 498. 132 | 9.547, 796 | 9,175,845 |
| Sydney | 185. 596 | 773,674 | 1,009,994 | 702,767 | 2,852,031 | 3,359,065 |
| Hantsport. | 2,014.044 | 1,831 |  | 8,350 | 2.025,225 | 2,246,802 |
| Port Hawkesbury . . . . . | 640,687 | 67.811 | 27,640 | 17,525 | 753, 673 | 833.214 |
| deek in 1964). | 184,309 | - 7 | 225,993 | 2 | 410,304 |  |
| North Syduey. | 9.838 | 75 | 384,386 | 30,571 | 404,880 | 378,878 |
| New Brunswi | 2,576,595 | 2,967,062 | 1,221, 883 | 1,078,318 | 7,838,648 | 7.647,308 |
| Saint Job | 1,475.182 | 2,744,973 | 1,124,707 | 472,999 | 5,817, 861 | 5.833, 131 |
| Dalhousie | 681,578 | 23, 138 |  |  | 704,716 | 504, 404 |
| Newcastle | 163,386 | 14,468 | 50 | 150.885 | 328.789 | 330.870 |
| Cbatham | 60.598 | 27,708 | 6,689 | 227.636 | 322,632 | 253,080 |
| Quebec. | 41,131,00\% | 16,4**,541 | 2,378,868 | 16,246,751 | 83,877,152 | 81,101,691 |
| Montreal | 4,896.425 | 7,689,576 | 4, 239,991 | 5,085,342 | 21,811.334 | 21,562,943 |
| Sept Ile | 16,677,891 | 578,244 | 1. 222.060 | 196,352 | 18+674,547 | 16,598,933 |
| Port Cartie | 9,093,794 | 68,135 | 171,432 | 20,809 | 8,354,170 | 10, 224, 551 |
| Baje Comea | 4,023,522 | 2,016,413 | 174,270 | 2,221,004 | 8.435,209 | 8,305,563 |
| Quebec | 1,722,795 | 1,404,148 | 197,085 | 3.005.177 | B. 329.205 | 6, 088.295 |
| Troís-Rivièr | 1,926, 647 | 1,390,088 | 80,632 | 1,378,522 | 4,775,889 | 4,547,809 |
| Sorel. | 1,638,452 | 419,765 | 75.332 | 2,458,379 | 4,591,928 | 4,359,499 |
| Port Alfred | 417,538 | 2,436,319 | 27,220 | 440,293 | 3,321,868 | 3.312,525 |
| Havre St. P |  |  | 1,431.999 | 10,590 | 1,442.589 | 1,371,526 |
| Contrecoeur | 378.164 | 511,389 | 86.557 | 10,083 | 966.203 | 1,001,274 |
| Forestville. |  |  | 853,432 | 45,522 | 898,954 | 928.053 |
| Rimouski | 45,638 | 27.428 | 88.907 | 371,695 | 541,668 | 415,404 |
| Chieout | 1,000 | 18,374 | 6,106 | 488,473 | 512,953 | 514,598 |
| Ontario. | 3,230,155 | 24,482,613 | 19,675,381 | 14,108,370 | 67,101,525 | 68,139,125 |
| Port Arthur-Fort William | 3,798.903 | 307.077 | 11,839,506 | 1,092. 198 | 17,037,685 | 18.398 .270 |
| Hamilto | 204.482 | 7,842,214 | 508,233 | 1,738.6886 | 10,293,615 | 9,382,558 |
| Toronto | 251,965 | 3,828.025 | 249,432 | 1,496.678 | 5,826, 100 | 5,713,090 |
| Ssult Ste. Marie | 242,900 | 3,691,580 | 305,327 | 2,163,209 | 5, 403, 016 | 5,681.189 |
| Sarnia. | 168.037 | 1.208,386 | 2,283, 683 | 514,717 | 4,174, 823 | 3,794,732 |
| Port Coll | 1,250,657 | 473,246 | 295,515 | 945, 695 | 2,925,113 | 3,563,153 |
| Windsor | 441,019 | 1,179, 424 | 396.849 | 398, 557 | 2,415,849 | 2,058.934 |
| Port Credi | 12,034 | 1,512,712 | 191,398 | 263.143 | 1,979,287 | 1,972.391 |
| Clarkson. | 24,850 | 182.613 | 399.185 | 1,347,380 | 1,934, 028 | 1,679.841 |
| Prescol | 41,058 | 433,329 | 276.334 | 566, 179 | 1.306,900 | 1,104,522 |
| Pícton. | 715.063 | 151.860 | 289.082 | 43,399 | 1, 199.404 | 1,391,086 |
| Little Curre | 562.622 | 543,503 | 5.450 | 39,824 |  | 1,099, 984 |
| Colborve |  |  | 1,079.950 |  | $1.079,950$ 1.077 .693 | 1,126,073 |
| Goderich | 284, 560 | 31,748 | 357, 845 | 403,740 8,250 | $1.077,693$ 734,370 | 8727,278 |
| Mepot | 726,120 | $\overline{49} .125$ | 62,463 | 612.769 | 724,357 | 733,070 |
| Kirgston |  | 125, 153 | 196, 193 | 354,081 | 675,427 | 682,52i |
| Thorold | 118,829 | 335.081 | 43,373 | 177,333 | 674,616 | 824,405 |
| Walkervill |  | 295, 803 | 25,771 | 158,652 | ${ }_{442}^{48}, 228$ | ${ }_{4}^{471,288}$ |
| Michipicoten Harbour | 210,140 | 30,79] | 161,490 | 39,883 399.239 | 442,304 421,143 | 349,446 |
| Parry Sound. |  | 18,906 27,327 | 2,998 11,283 | 399.239 372,335 | 421,143 410,925 | 3418,82 418 |
| Port Stanle | - | 223,872 | 14,348 | 159,964 | 398, 184 | 361, 18 |

[^266]
## 8.-Cargoes Loaded and Unloaded at Principal Canadian Ports from Vessels in International Seaborne and Coastwise Shipping, by Province, 1965 with Totals for 1964concluded

| Province or Territory and Port | International |  | Constwise |  | $\begin{gathered} \text { Total } \\ 1065 \end{gathered}$ | Total 1964 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Loaded | Unloaded | Loaded | Unloaded |  |  |
|  | tons | tons | tons | tons | tons | tons |
| Ontario-concluded |  |  |  |  |  |  |
| Port MeNicoll. | - | 5,531 | 3,945 | 365,725 | 375,201 | 323,297 |
| Melleville. | 103.755 | 183,653 107.582 | 116,028 33,800 | 37,501 80.953 | 337.182 325,890 | 206, 8137 |
| Port Burwell | . 396 | 307,951 |  | 4.052 | 312,399 | 336.368 |
| Oshawa. | 719 | 148.279 | - | 153,730 | 302, 728 | 276.712 |
| Manitob* | 740,755 | 20,269 | 5,858 | 95 | 766,977 | 711,992 |
| Charchill | 740.755 | 20,269 | 5.858 | 95 | 766,977 | 711,568 |
| Hritish Columbla | 19,045,757 | 3,937,756 | 17,073,028 | 17,778,920 | 58,385,461 | 5s,032,703 |
| Vancouver. | 9,290,502 | 2,067,296 | 4,748.987 | 4,397,324 | 20.502,089 | 20,055.635 |
| New Westminster | $1+017.900$ | 197,578 | $2,359,877$ | 1.283.352 | 4,858,707 | 4,371,033 |
| Victoris. | 1,003,889 | 146,003 | 333,987 | 920,953 | 2,404,832 | 2,663,717 |
| Nanaimo. | 646.923 | 77,202 | 507.053 | 734,732 | 1,965,910 | 1,254,483 |
| Duncsn Bay | 286,969 | 33,635 | 111,270 | 1,426,124 | 1,857,998 | 1,374,750 |
| Powell River | 322,454 | 50.830 | 315,203 | 953.177 | 1,641, 664 | 1,388,240 |
| Britannia Bea | 52,612 | 7,804 | 873,821 | 645,887 | 1,580.124 | 1.393,003 |
| Ocesn Falls. | 74,920 | 90, 559 | 387, 771 | 857,809 | 1,351,059 | 1,176,760 |
| Crofton. | 294,658 | 91,628 | 230,764 | 718, 131 | 1,333,179 | 1,008.399 |
| Prince Rupert | 561,555 | 324,884 | 88.087 | 336,329 | 1.310,835 | 1,269,779 |
| Port Alberni. | 750.708 | 60,386 | 20, 165 | 419,112 | 1,250,371 | 898,613 |
| Port Mellon | 66,544 | 5,459 | 53,381 | 994,915 | 1,120,299 | 895.527 |
| North Arm Fraser Rive | - |  | 182, 582 | 834, 834 | 1,017,496 | 6.69 .594 |
| Howe Sound. |  | 6,700 | 420,112 | 533.016 | 959,828 | 892,192 |
| Kitimat. | 87.878 | 492,371 | 147, 201 | 80.785 | 808,235 | 686.148 |
| Blubber Ba | 753,630 |  | 36,126 | 1, 465 | 791.221 | 196. 160 |
| Ladysmith | 1,805 | 2,173 | 685, 493 | 58,871 | 748.142 | 785,815 |
| Port Mood | 671,453 | 3,833 | 17,075 |  | 692,361 | 589,007 |
| Texads. | 683,088 | $\cdots$ | 40 | 2,445 | 685.573 | 497, 710 |
| Toquart., | 658.783 | - |  |  | 658,783 | 768.777 |
| Courtenay | 7.806 | $\overrightarrow{48}, 105$ | 538,151 21 | 63.913 474.043 | ${ }^{6022,064}$ | $\begin{array}{r}476.269 \\ \hline\end{array}$ |
| Chemainus | 300,066 | 6.874 | 154, 862 | 21,883 | 483,685 | -656, 491 |
| Campbell River | 182.277 | 19,970 | 25,766 | 244,077 | 467,080 | 485, 100 |
| Quattino. | 55.972 | 98,583 | 94, 046 | 135.276 | 384.877 | 424,460 |
| Tahsis (incl, with Vietoria in 1964) | 338.032 | - | 11. 490 | 21,756 | 371,278 |  |
| Jervis Inlet..... | 9,83 | 24,684 | 241,940 | 92, 409 | 334,349 | 377.059 |
| Blind Bay. |  |  | 200,920 | 119.016 | 323,861 318,938 | 301,057 |
| Zeballoe. | 249,109 | - | 55,218 | 4,994 | 309,411 | i63.475 |
| Northwest Terrltorles, | -- | - | 493 | 41,563 | 42,056 | 42,317 |
| Totals. | 82,145,421 | 58,841,74* | 53,131,205 | 53, 494,252 | 24,015,618 | 231,951,117 |

The freight movement through a large port takes a number of different forms. These include cargoes loaded for and unloaded from foreign countries and cargoes loaded and unloaded in coastwise shipping, i.e., domestic freight moving between Canadian points. There is, as well, the in-transit movement in vessels that pass through the harbour without loading or unloading and the movement from one point to another within the harbour, which in many ports amounts to a large volume.

Shipping statistics, which cover traffic in and out of both customs and non-customs ports, do not include freight in transit or freight moved from one point to another within the harbour. Table 4 shows the principal commodities loaded and unloaded in foreign and coastwise shipping at the 12 ports handling the largest cargo volumes in 1965. These ports handled 65.8 p.c. of all Canada's international shipping and 44.7 of the coastwise trade. The specific commodities shown are those transported in volume and often in bulk form.

## 4.-Principal Commodities in Water-Borne Cargo Loaded and Unloaded at Ports Handling the Largest Tonnages in 1965

Note.-Only commodities totalling over 50,000 tons are listed.

| Port and Commodity | International |  | Coastwise |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Loaded | Unloaded | Loaded | Unloaded |  |
|  | tons | tons | tons | tons | tons |
| Montreal. . . . . . . . . . . . . . . . . . . . . . . . . | 4,896,425 | 7,689,576 | 4,239,991 | 5,085,342 | 21,911,334 |
| Wheat. | 2,429,691 | 955,308 |  | 3,180,758 | 5,705,757 |
| Fuel oil. | 82,401 | 2,144,661 | 2,148,636 | 56,013 | 4,431,711 |
| Gasoline. |  | $2,174,413$ 60,541 | 10,833 $1,090,044$ | 21,096 4,685 | 2,206,342 |
| Corn. | 226,379 | 334,907 | 1,00,014 | 20,768 | 1,155,270 |
| Coal, bituminous |  | 430,338 | - | 141,773 | 572,111 |
| Raw sugar |  | 380,302 | - |  | 380,302 |
| Gypsum. | - |  | 2,200 | 367,973 | 370, 177 |
| Structural shape | 4,197 | 271,037 | 8,025 | 14,447 | 297,706 |
| Barley. | 49,666 |  |  | 233,213 | 282,879 |
| Plate and sheet s | 48,994 | 48,072 | 8,366 | 171,855 | 277,287 |
| Salt. |  | 24,038 | 21 | 216,848 | 240,907 |
| Cement. | 6 | 18,589 | 209,870 |  | 228,4e5 |
| Lubricating oil and greas | 133 | 47.203 | 144,726 | 15,902 | 207,964 |
| Soybeans. | 115,432 | 49,564 | 3,890 | 32,315 | 201,201 |
| Wheat flour | 189,888 |  | 6,357 | 955 | 197,240 |
| Oats | 11,375 |  |  | 132,693 | 144,068 |
| Petroleum coal products, n.e | 7,109 | 24,591 | 10,122 | 63,277 | 105,099 |
| Manganese ore | 8,72' | 87, 141 | 3,662 |  | 99.530 |
| Bars and rods, steel | 4,124 | 61,617 | 13,330 | 18,723 | 97,794 |
| Molasses, crude |  | 85,083 |  |  | 85,083 |
| Miscellaneous food preparations, | 34,825 2,135 | 1,055 | 40,480 | 47,775 37 | 81,252 |
| Copper and alloys........ | 61,670 | 271 | 250 | -2,821 | 65,012 |
| Crude non-metallic minerals, $n$.e | 45,846 | 16,627 | $\square$ |  | 62,473 |
| Other commodities not listed. | 1,573,827 | 1,334,174 | 537,820 | 305,870 | 3,751,691 |
| Vancouver | 9,290,502 | 2,067,296 | 4,746,967 | 4,397,324 | 20,502,089 |
| Wheat | 3,688,822 |  | 5,040 |  | 3,693,882 |
| Pulpwood | 326,133 | 10,062 | 1,884,576 | 204,004 | 2,424,775 |
| Sand and gravel | 900 | 332,542 | 12,408 | 1,780,403 | 2,126,253 |
| Lumber and timber | 1,342,790 | 11,913 | 47,846 | 193, 530 | 1,596,079 |
| Logs. | 103,599 | 195,623 | 109,051 | 722,382 | 1,130,655 |
| Fuel oil | 13,603 | 243,361 | 842,499 | 2,682 | 1,102,145 |
| Hogged fuel | 188,432 | - | 734,053 | 2,600 | 925,085 |
| Fertilizers. | 773,171 | 5,723 | 3,849 |  | 783,628 |
| Pulp. | 130,898 | 1,977 | 1,700 | 517,831 | 652,406 |
| Sulphur in ores. | 574,520 |  | 26,845 |  | 601,365 |
| Newsprint paper | 33,142 | 30 | - | 443,991 | 477, 163 |
| Barley. | 464,991 |  | - 230 |  | 464,991 |
| Coal, bitumino | 450,628 | - | 239 | 220 | 451,087 |
| Gasoline. | 8,494 | 27,180 | 342,746 | 468 | ${ }^{378,888}$ |
| Salt.... | 223,885 | 200,780 | -34,356 |  | 223,885 |
| Cement. | 6,194 | 2,828 | 9,063 | 153,886 | 171,971 |
| Flaxseed | 156,997 |  | - | - | 156,997 |
| Phosphate rock. |  | 150,934 |  |  | 150,934 |
| Inorganic chemicals | 2,436 | 2,913 | 135,484 | 1,000 | 141,833 |
| Plate and sheet steel.... |  | 119,768 |  |  | 119,117 |
| Copper ore and concentrate | 12,981 | $\overline{55,437}$ | 340 | - | 98,758 |
| Organic chemicals | 3,977 | 2,307 | 77,619 | 500 | 84,403 |
| Raw sugar..... |  | 84,257 | - | - | 84,257 |
| Wheat flour | 76,425 |  |  |  | 73,431 |
| Stone, crude, n.e. |  |  |  | 56,926 | 71,934 |
| Concentrated complete fe | 71,097 | 24 |  | - 8 | 71,187 |
| Oats....... . . . . | 62, 176 | - | - | - | 62,176 |
| Rye | 60,687 | $\overline{7}$ |  | - 50 | 60.687 |
| Metallic salts | 159 | 40,177 | 15,577 | $\stackrel{50}{50}$ | 55,963 |
| Structural shapes. | 645 | 48,284 | 6,174 | 152 56 | 55,250 55,010 |
| Lubricating oil and grease.... | ${ }_{353} 151$ | 7,943 523,100 | 46,860 403,312 | 56 242,475 | 1,522,181 |
| Other commodities not listed. | 353,294 | 523,100 | 403,312 | 242,475 | 1,522,181 |
| Port Arthur-Fort William. Wheat. Iron ore and concentrates. | 3,798,903 | 307,077 | 1,839,506 | 1,092,199 | $17,037,685$ $9,246,307$ |
|  | 181,433 | - | 9,064, 874 | - | $9,246,307$ $3,150,310$ |
|  | 2,433,965 |  | 716,345 |  | 3,150,310 |

4．－Principal Commodities in Water－Borne Cargo Loaded and Unloaded at Ports Handling the Largest Tonnages in 1385－continued

| Port and Commodity | International |  | Cosstwise |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Loaded | Unloaded | Losded | Unloaded |  |
|  | tons | tons | tons | tons | tons |
| Port Arthur－Fort Firlam－concluded Barley．．．．．．．．．．．．．．．．．．．．．．．．．．．． | 266，509 | － | 888，187 | $\cdots$ | 1，154，686 |
| Oata．．． | 171.617 | － | 609， 899 |  | 781，516 |
| Pulpwood | 80，100 |  | 4，630 | 228，750 | 313，480 |
| Flarseed． | 201，701 | － | 103，319 |  | 305，020 |
| Fael oil． |  | 20． | － | 232，902 | 232.902 |
| Coal，bituminous | 183，351 | 232，074 | 834 | 二 | 232,074 184,185 |
| Wheat flour．．． | 26，923 | $\cdots$ | 128，354 | 1，016 | 156，293 |
| Gamolime． |  | － | － | 132，781 | 132，781 |
| Rye． | 61，580 | $\square$ | 47，257 |  | 108，832 |
| Ground veresls，n．e． | 3，878 |  | 77，104 | 73 | 83,050 |
| Malt and malt flour． | 18，226 | 二 | 82， 288 |  | 80,514 |
| Hulls，screenings，cha | 9，733 | － | 66，556 | － | 76,289 |
| Salt．．．．．．．．．．．．． |  |  |  | 66，042 | 68，042 |
| Concentrated complete feed | 57,920 52,315 | － | 4，855 |  | 62,775 52,315 |
| Other commodities not listed． | 47，657 | 75，003 | 65，004 | 430，635 | 818，299 |
| Sept fles． | 15，296，489 | 482，598 | 489，87\％ | 177，374 | 16，426，395 |
| Iron ore and concentrates | 15，257，460 |  | 153，872 |  | 15，711，332 |
| Fuel oil． |  | 408，00： | 3，368 | 29，056 | 440，428 |
| Bentonite． | － | 63，904 | ． | 200 | 54，104 |
|  |  |  |  |  |  |
| Hamilton．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | $\begin{array}{r} 204,488 \\ 21 \end{array}$ | $7,812,214$$8,85,561$ | 508，233 | 1，738， 466 | 10，203， 615 |
| from ore and concentirates． |  |  |  | 1，029，079 | 4，884，661 |
| Coal，bituminous． | $-\quad 21$ | 3，205，618 | 6，424 |  | 3，212，042 |
| Frel oij． | $\begin{array}{r} 99 \\ 19,379 \end{array}$ | 113，011 |  | 400，499 | 518，609 |
| Plate and shest steel |  | 89，999 | 130，310 |  | 240，477 |
| Wheat． |  |  | 103，760 | 63，467 | 167，227 |
| Soybesas． |  | 144．803 |  | 3，890 | 148， 693 |
| Bars and rods，stee | 7，297 | 102，971 | 17，970 | 1，924 | 130，162 |
| Gasolise．．${ }^{\text {a }}$ ．$\ldots$ ．．．．． | $\begin{array}{r} \overline{58}, 225 \\ 119,461 \end{array}$ | $\begin{array}{r} 340 \\ 329,911 \end{array}$ | － | 58，926 | 58.926 |
| Soybean oil meal and cake． Other commodities not lizte |  |  | 249，769 | 180，112 | 58，565 879,253 |
| Halifar．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | $2,912,532$ | $\begin{aligned} & \mathbf{4 , 0 8 2 , 0 6 2} \\ & 3,089,838 \end{aligned}$ | 2，105，070 | 498，132 | $\begin{aligned} & 9,547,796 \\ & 3,089,838 \end{aligned}$ |
| Crude petroleum |  |  |  |  |  |
| Fuel oil． | $\begin{array}{r} 78,217 \\ \mathrm{I}, 744,820 \end{array}$ | －668，323 | 1，347，014 | 96，971 | 2，130，525 |
| Gypsum |  |  | 128，089 |  | 1，872，909 |
| Gasoline | $1,744,820$ |  | 566，084 | 91.313 | 664，483 |
| Wheat． | $\begin{aligned} & 462,831 \\ & 126.107 \end{aligned}$ | $\underline{-7,086}$ | － | 145，026 | 607， 857 |
| Wheat flou： |  | － | 6，374 | 3，613 | 136，094 |
| Cement． | $\begin{array}{r} 126,107 \\ 13 \end{array}$ | 14444,161 | － | 58，396 | 58，553 |
| Irou ore and concentrates | ${ }_{17}^{17}$ |  | － | 8，400 | 52，578 |
| Lomber and timber．．．．．．．． | 44,499516,028 | 5,578216,932 | 34957.180 | 8， 5094 | 50，476 |
| Other commodities not listed |  |  |  |  | 884，483 |
| Port Cartler． | $\begin{aligned} & \mathbf{9}, 093,794 \\ & 9,093,794 \end{aligned}$ | ©8，135 <br> 88,135 | $\begin{aligned} & \mathbf{1 7 1 , 4 3 2} \\ & \mathbf{3 6 9 , 9 3 3} \end{aligned}$ | 30，809 | $\begin{array}{r} \mathbf{9 , 8 5 4 , 1 7 0} \\ \mathbf{9 , 2 6 3 , 7 2 7} \\ 68,135 \\ 22,308 \end{array}$ |
| Irour ore and concentrates |  |  |  | － |  |
| Fuel oil．．．．． |  |  | 1，409 | 20， 809 |  |
| Bale Comeaut ．．．．．．．．．．．．．．．．．．．．．．．．． | 4，023，522 | 2， 1616,413 | 174，270 |  | 8，435， 2 at |
| Wheat．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | $\begin{array}{r} 2.214 .086 \\ 800,645 \end{array}$ | $\begin{aligned} & 418.190 \\ & 859.708 \end{aligned}$ |  |  |  |
| Corn． |  |  | 二 | 1，794，531 | $1.750,363$ |
| Soybeans． | 336，861 | $\begin{aligned} & 803,193 \\ & 3 \end{aligned}$ | 146， 520 | － | 640.054 |
| Pulpwood． | $\begin{aligned} & 161,631 \\ & 260,224 \\ & \hline \end{aligned}$ |  |  | $\leftarrow$ | 308， 158 |
| Newaprint paper |  | 二 | － |  | 260，224 |
| Fuel oil． | － | 102，494 | － | 85.077 | 187，571 |
| Cement． | $\overline{78}, 590$ |  | － | 178.348 | 178，348 |
| Barley．．．．．．．．．．．．．．．． |  |  | － |  | 155，055 |
| Alumins and baurite ore | －0， | 151，558 |  |  | 151，558 |
| Gasoline． | 59，001 | － | 15，042 | $\begin{array}{r} 50,470 \\ 112,578 \end{array}$ | 74,043 50,470 |
| Other commodities not Jisted． | 22，471 | 104， 811 | 12，708 |  | 252．568 |

4．－Princlpal Commodities in Water－Borne Cargo Loaded and Unioaded at Ports Fanding the Largest Tonnages in 1965－concluded

| Port and Commodity | International |  | Coastwise |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Loaded | Unloaded | Loaded | Unloaded |  |
|  | tons | tons | tons | tone | tons |
| Qutbec | 1，722，795 | 1，404，148 | 197，085 | 3，005，177 | 6，329，205 |
| Fuel oil | 1， | 1，918，973 | 58，053 | 3，464，154 | 1，441，180 |
| Wheat． | 524，535 | 30，186 |  | 548，655 | 1，103，376 |
| Pulpwood | 13，918 |  | 710 | 941，470 | 954，098 |
| Gusoline． |  | 28，025 | 8，452 | 512，854 | 547，331 |
| Newsprint paper | 309，689 | 184，068 | 二 |  | 310， 451 |
| Asbestios． | 233，210 | － |  |  | 233，210 |
| Coal，biturainous． | － | 31，728 | 600 | 177．125 | 209，453 |
| Zinc ore and concentrates | 194，762 |  | － | 3，954 | 198，716 |
| Barley． | 11，091 | 12，434 |  | 185， 829 | 189， 354 |
| Soybeans | 40，308 | 58，979 | － | 134,630 2,357 | 101，842 |
| Lumber and timber | 71，404 | $\cdots$ | 964 | ${ }^{2} 383$ | 72，701 |
| Cement． |  | 40 | 70，606 | － | 70，646 |
| Pulp． | 65，078 |  | 240 | － | 65.318 |
| Copper ore and concentrates． | 60.302 74,117 | 141，715 | $\stackrel{\square 7,460}{ }$ | 53.816 | 60,302 327,108 |
| Oter commodites not isted． |  | 14，75 | 5，540 | 3， 81 | 327，108 |
| Toronto | 251，985 | 3，825，025 | 248，432 | 1，496，678 | 5，824，109 |
| Coal，bituminous． |  | 2，396，528 | 2.316 | 438，175 | 2，835，019 |
| Fuel oil． | ■ | 283，438 | 88，554 | 238，439 | 610,481 |
| Soybears． | － | 302，914 | － | 007 | 303，821 |
| Cement | － |  | $\stackrel{\rightharpoonup}{1}$ | 264， 812 | 264， 812 |
| Whasoline |  | 31，847 | 132,369 3,438 | 7，177 | 171，393 |
| Balt． |  | 32， 898 |  | 100，378 | 133，276 |
| Raw sugar |  | 125，487 |  |  | 125，487 |
| Barley． | 2，548 |  | 2，800 | 101，563 | 106．917 |
| Soybean oil meal and cak | 100，202 | $\square$ | － |  | 100，202 |
| Lumesticating oil and gresso |  | 64，937 | 二 | 86,720 5,720 | 70，657 |
| Structural stapes．．．．．．．． |  | 58，257 | 93 | 1，402 | 59，769 |
| Other commodities not listed | 149，145 | 581.719 | 19，862 | 113，605 | 814，331 |
| Saint John． | 1，475，182 | 2，741，873 | 1，12s，7e7 | 472，899 | 5，817，881 |
| Crude petroleum |  | 2，118，870 |  |  | 2，118，870 |
| Fuel oil |  | 78，531 | 741，076 | 271，209 | 1，090，870 |
| Wheat．． | 883，064 | － |  |  | 503208 |
| Gasoline．．．．．．． | － |  | 332，047 | $\underline{171,161}$ | ${ }_{262}$ |
| Raw sugar ．．．．．． | 83.738 | 262，746 |  | － | 83，738 |
| Neweprint paperi．． | 57，392 | 724 |  |  | 58．145 |
| Other commodities not listed | 700，934 | 284， 102 | 51，555 | 30，620 | 1，067，220 |
| Sault Ste．Marie． | 242，900 | 8，691，580 | 305，327 | 1，168，209 | 5，403， 016 |
| Coal，bitumincus． | 11，751 | 2，267，964 | － | 3，600 | 2， 2883,315 |
| Iron ore and concentrates． | － | 841，831 | － | 670，409 | 1．512， 547.730 |
| Fumestone． | 二 | －47， |  | 324，130 | 324， 130 |
| Primary iron and steel，n．e．s． | 181，441 | － | 24，394 |  | 185， 922 |
| Plate and sheet steel．． | 22，688 | 11，990 | 104，862 | 92．${ }^{46}$ | 139，386 |
| Giasoline．．．．．．．．． |  |  |  | 92,130 128 | 52，1356 |
| Other commoditiee not lis | 46，978 | 22，025 | 122，625 | 72，679 | 264，307 |

## Subsection 2．－Harbours

Water transportation cannot be studied with any degree of completeness without taking into consideration the co－ordination of land and water transportation at many of the ports．Facilities provided to enable interchange movements include the necessary docks and wharves，some for passenger traffic but most of them for freight，warehouses for
handling of general cargo, and special equipment for bulk freight of all kinds. Facilities may include cold storage warehouses, harbour railway and switching connections, grain elevators, coal bunkers, oil storage tanks and, in the chief harbours, vessel repair docks.

Nine of the principal harbours of Canada are administered by the National Harbours Board and 11 other major harbours are administered by Harbour Commissioners, which include municipal as well as Federal Government appointees. In addition, there are about 300 public harbours under the direct supervision of the Department of Transport, administered under rules and regulations approved by the Governor General in Council. Harbour masters are appointed by the Minister of Transport for these harbours, their remuneration being paid from fees levied on vessels, under the terms of the Canada Shipping Act.

Throughout the country there are several thousand wharves and breakwaters administered by the Department of Transport under the Government Harbours and Piers Act. These facilities are for the accommodation of cargo ships and commercial fishing craft and are under the general supervision of the Department of Transport District Marine Agents. Wharfingers, whose remuneration is determined as a percentage of wharfage fees collected, are appointed for the direct supervision of these public wharves and floats. They are designed to accommodate the smallest fishing or pleasure craft or the largest ocean-going vessels, according to local requirements. At many ports, in addition to public harbour works operated by the administering authority, there are extensive dock and handling facilities owned by private companies including railway, lumber, pulp and paper, coal, steel, iron ore, petroleum, grain, fish and other industries moving large volumes of bulk materials.

In 1965, the harbours of Canada handled more than 240,000,000 tons of cargo in more than 250,000 vessel arrivals and departures in international seaborne and coastwise shipping.

National Harbours Board.-The National Harbours Board, a Crown corporation established in 1936, is charged with the administration and operation of the following properties: port facilities such as wharves and piers, transit sheds, grain elevators, cold storage warehouses, terminal railways, ete., at the harbours of St. John's, Halifax, Saint John, Chicoutimi, Quebec, Trois-Rivières, Montreal, Vancouver and Churchill; grain elevators at Prescott and Port Colborne; and the Jacques Cartier and Champlain Bridges at Montreal. Facilities at the larger harbours are listed in Table 5, and summary traffic statistics for 1964 and 1965 in Table 6. Operating revenues and expenditures are given in Table 20, p. 837

## 5.-Facilities of the Larger Harbours Administered by the National Harbours Board, as at Dec. 31, 1965

\footnotetext{
Nors.-The lacilities at these ports include those under the control of other agebcies as well as those of the Nstional Harbours Board.

| Item | Halifax | Saint John | Quebec | TroisRivières | Montreal | Vancouver |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Minimum depth of approach channel. <br> Harbour railway. ........................ <br> Piers, wharves, jetties, etc.. No. <br> Length of berthing. ........ It. <br> Transit-shed floor space..sq. It. <br> Cold atorage warehouse capacity. <br> .cu. it. |  |  |  |  |  |  |
|  | 51 | 30 | 31 | 35 | 35 | 39 |
|  | 31 | 84 | 23 | 5 | 59.5 | 10 |
|  |  |  |  | ${ }^{18}$ |  |  |
|  | 1,547,500 | 938,000 | 677,700 | 482,365 | 3,750,000 | 1,552,600 |
|  | 1,719,000 | 900,000 | 1,500,000 1 | - | 2,900,000 | 4,633,547 |

${ }^{1} \mathrm{Main}$ warehonse 500.000 cu . ft., fish house $1,000,050 \mathrm{cu}$. ft .

## 5.-Facilities of the Larger Harbours Administered by the National Harbours Board, as at Dec. 31, 1965-concluded

| Item | Halifax | Saint John | Quebec | TroisRivières | Montreal | Vancouver |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Grain Elevators- |  |  |  |  |  |  |
| Capacity............... bu. | 4,152,500 | 3,000,000 | 8,000,000 | 9,300,000 | 22,262,000 | 21,775,000 |
| Loading rate...... bu. per hr. | 90,000 | 150,000 | 90,000 | 55,000 | 728,000 | 280,000 |
| Floating crane capacity... tons |  | 65 | , 75 |  | , 365 | ${ }^{75}$ |
| Coal dock storage capacity. " | 253, 12,000 |  | $3,000,0001$ | 400,000 | 175,000 | 110,000 |
| Oil tank storage capacity.. gal. | 253,680,000 | 41,346,500 | 1,760,000 ${ }^{2}$ | 39,309,479 | 1,278,885,925 | 346,967,500 |

${ }^{1} \mathrm{Sq} . \mathrm{ft} . \quad{ }^{2} \mathrm{Bbl}$.

## 6.-Summary Traffic Statistics for Harbours Administered by the National Harbours Board, 1964 and 1965

| Port or Elevator | Vessel Arrivals | Vessel Tonnage | Cargo Tonnage | Grain Elevator Deliveries |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | bu. |
|  | 1,851 | 1,437,229 | 466,293 | - |
| Halifax. . . . . . . . . . . . . . . . . . . . . . . . . . . . 19.1964 | $\begin{aligned} & 3,377 \\ & 3,372 \end{aligned}$ | $\begin{aligned} & 6,710,705 \\ & 6,989,871 \end{aligned}$ | $\begin{aligned} & 9,628,658 \\ & 9,952,713 \end{aligned}$ | $\begin{aligned} & 23,288,469 \\ & 22,429,328 \end{aligned}$ |
| Saint John. .......................................... 1964 | 1,888 1,792 | $4,163,850$ $4,044,562$ | $\begin{aligned} & 6,262,591 \\ & 6,115,008 \end{aligned}$ | $\begin{aligned} & 22,053,690 \\ & 24,337,092 \end{aligned}$ |
| Chicoutimi........................................... 1964 | 156 155 | $\begin{aligned} & 281,313 \\ & 280,020 \end{aligned}$ | $\begin{array}{r} 477,524 \\ 518,660 \end{array}$ | ... |
| Quebec...................................................... 1964 | 3,469 3,151 | $\begin{array}{r} 7,742,000 \\ 7,872,000 \end{array}$ | $\begin{array}{r} 6,258,920 \\ 6,646,453 \end{array}$ | $\begin{aligned} & 44,081,825 \\ & 49,272,586 \end{aligned}$ |
| Trois-Rivières................................... 1964 | 2,325 | $\begin{aligned} & 3,963,914 \\ & 3,937,558 \end{aligned}$ | $\begin{aligned} & 5,192,812 \\ & 5,222,689 \end{aligned}$ | $\begin{aligned} & 54,917,501 \\ & 59,958,980 \end{aligned}$ |
| Montreal.......................................... 1964 | 6,016 6,318 | $19,704,942$ $21,646,140$ | $\begin{aligned} & 23,070,920 \\ & 23,445,236 \end{aligned}$ | $\begin{aligned} & 168,713,104 \\ & 142,642,311 \end{aligned}$ |
| Prescott. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . $1964{ }_{1965}$ | $\ldots$ | $\ldots$ | $\ldots$ | $\begin{aligned} & 15,582,409 \\ & 20,317,332 \end{aligned}$ |
| Port Colborne.................................. ${ }_{1965} 1964$ | $\cdots$ | $\cdots$ | $\ldots$ | $\begin{aligned} & 12,908,529 \\ & 10,104,816 \end{aligned}$ |
| Churchill.............................................. 1964 | 72 98 | $\begin{aligned} & 296,059 \\ & 318,295 \end{aligned}$ | $\begin{aligned} & 719,282 \\ & 780,248 \end{aligned}$ | $\begin{aligned} & 22,067,711 \\ & 25,002,972 \end{aligned}$ |
| Vancouver............................................ 1964 | $\begin{aligned} & 21,462 \\ & 21,746 \end{aligned}$ | $\begin{aligned} & 18,670,875 \\ & 19,220,510 \end{aligned}$ | $\begin{aligned} & 19,793,810 \\ & 20,166,534 \end{aligned}$ | $\begin{aligned} & 204,013,205 \\ & 169,205,721 \end{aligned}$ |
| Totals................................. 1964 | 38,765 | 61,533,658 | 71,404,617 | 567,626,443 |
| 1965 | 40,554 | 65,746,185 | 73,313,834 | 523,271,138 |

${ }^{1}$ Under the administration of the National Harbours Board since Jan. 1, 1965.

## Subsection 3.-Canals

The canals and canalized waters of Canada under the jurisdiction of the Department of Transport, together with those under the jurisdiction of the St. Lawrence Seaway Authority, comprise a series of waterways providing navigation for 1,875 miles inland from salt water.

Those included under the two classifications-Seaway canals and Department of Transport canals-are listed in Table 7 with their locations, lengths and lock complement. In addition to these, the federal Department of Public Works administers the St. Andrew's Lock (length, width and draught, respectively, 215, 45 and 17 feet) on the Red River at Selkirk, Man., and the lock at Poupore, Que. A few small locks are operated by provincial authorities.

During 1965, 99,395,117 tons of freight and 23,356 vessels passed through the canals as compared with $93,276,850$ tons of freight and 23,155 vessels during 1964. In addition to freight and passenger vessels, thousands of pleasure craft are locked through the canals. Vessels locking at Sault Ste. Marie during 1965 carried 157,813 passengers as compared with 131,396 in 1964.

## 7.-Lengths of Channels and Dimensions of Locks under the Control of the St. Lawrence Seaway Authority or the Department of Transport



[^267]
## 8.-Traffic through Canadian Canals, by Registry of Vessel, Navigation Seasons 1956-65

Nore.-Figures include duplications where vessels pase through two or mone canals. Ficures from 1886 are given in the correaponding table of previous Year Books beginning with the 1902 edition.

| Navigation Seacon | Canadian |  | United States |  | United Kingdom |  | Other |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Versels | Registered Tonnege | Vessels | Registered Tonasge | Vesasels | Registered Tonnage | Vessels | Registered Tounage |
|  | No. | No. | No. | No. | No. | No. | No. | No. |
| 1956. | 27,473 | 31,019, 188 | 3.776 | 3,675,511 | 267 | 186,978 | 1,349 | 1,141,259 |
| 1957. | 24,191 | 27,726,358 | 3,324 | 3,802,909 | 332 | 221,254 | 1,589 | 1,364,205 |
| 1058. | 21,763 | 26,655,559 | 3,216 | 3,02\%,624 | 302 | 198,925 | 2,170 | 1,783,309 |
| 1959. | 21,363 | 28,703, 462 | 4,819 | 4,233,936 | 1,125 | 3,130,140 | 3,252 | 7,321,449 |
| 1960. | 19,815 | 28,963,294 | 5.046 | \$,660,831 | 1,303 | 3,971,587 | 3,464 | 9,455,739 |
| 1961... | 17,332 | 32,531,256 | 3,307 | 2,515,202 | 1.845 | 6,294,753 | 3,496 | 10.065, 901 |
| 1852 | 13,836 | 31,677,612 | 3,524 | 4,045,470 | 1,983 | 6.769,909 | 3.538 | 11,017,809 |
| 1983.. | 13,821 | 38,040,238 | 3,106 | 4,016.111 | 1.637 | 6,932,454 | 3,247 | 10,248,050 |
| 1964.. | 14,256 | 40,025,355 | 2,900 | \$,461,310 | 2,043 | 9,494,484 | 3,950 | 13,176,847 |
| 1965. | 12,959 | 42,704, 703 | 2,827 | 3,966,615 | 2.399 | 10,852,520 | 5,171 | 14,963,462 |

## 9.-Freight Traffic through Canadian Canals, by Origln of Cargo, Navigation seasons 1954-85

Nors.-Figures include duplications where cargoes pass through two or more canals. Figures from 1886 are given in the corresponding table of previous Year Books beginning with the 1902 edition.

| Navigation Season | Canada |  | United States |  | Britsin |  | Other |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Tons | P.C. of Total | Tons | P.C. of Total | Tons | $\underset{\text { Total }}{\text { P.C. of }}$ | Tons | $\begin{aligned} & \text { P.C. of } \\ & \text { Total } \end{aligned}$ | Tons |
| $1956 .$. | 24, 898,001 | 61.7 | 14,457,217 | 36.1 | 106,448 | 0.8 | 754,899 | 1.9 | 40,016,565 |
| 1957. | 21,459,552 | 57.6 | 15,021,980 | 40.3 | 131,550 | 0.4 | 597,317 | 1.6 | 37,230,349 |
| 1958. | 21,832,526 | 62.2 | 12,177,376 | 34.7 | 223,059 | 0.6 | 868,626 | 2.5 | 35,096,587 |
| 1059. | 30,829,746 | 60.4 | 17, 134,694 | 33.5 | 320,982 | 0.6 | 2,784,700 | 5.5 | 51,076,132 |
| 1960.......... | 28,886,228 | 54.6 | 20,993,117 | 39.6 | 332,784 | 0.6 | 2,734,744 | 5.2 | 52,946,883 |
| 1981. | 31,487,898 | 55.1 | 23,175,984 | 40.5 | 315,991 | 0.5 | 2,242,843 | 3.9 | 57,222,696 |
| 1962. | 33,972, 361 | 53.4 | 26,228,794 | 41.3 | 805,831 | 1.3 | 2,561,305 | 4.0 | 68,568,291 |
| 1963.......... | 41,976,843 | 55.3 | 28,431,960 | 38.1 | 1,054,929 | 1.4 | 3, 121,605 | 4.2 | 74,585,427 |
| 1964.. | 56,298,982 | 60.3 | 31,488, 638 | 33.8 | 1.089,385 | 1.2 | 4,399,845 | 4.7 | 98,276,850 |
| 1965. | 56,00R,416 | 56.3 | 33,747,380 | 34.0 | 2,088,813 | 2.1 | 7,550,508 | 7.6 | 99,395,117 |

## 10．－Tonnage of Produets Carried by Canal，classified by Commodity Section，${ }^{t}$ Navigatlon Seasons 1864 and 1965

Nore．－Figures include duplications where cargoes pass through two or more canals．

| Year and Canal | Food， Feed， Beverages and Tobacco | Crude Materials， Inedible | Fabricated Msterials． Inedible | End Products， Inedible | Miscel－ <br> laneous <br> Freight | Domestic <br> Package Freight | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | tons | tons | tons | tons | tons | tons | tons |
| 1964 |  |  |  |  |  |  |  |
| Ssult Ste．Marie．． | 95，339 | 158，780 | 562，293 |  | 8，628 | 141，597 | 966， 837 |
| Welland． | 17，332，721 | 28．241， 438 | 4，970，334 | 283，057 | 64，980 | 528．904 | 51，414，382 |
| St．Lawrence River． | 16，485， 395 | 16，394，652 | $5,374,405$ | 356，238 | 128，214 | 701，269 | 39，440， 173 |
| Richelieu River．． |  |  | 91.675 |  | 453 67 | － | 92，138 |
| St．Peter＇s．．． | 304 | 110 | － | － |  | － | 481 |
| Murray 0 （taws River | － | － | $\overline{10}, 923$ | 1，758 | － | － | 12，681 |
| Rideau． | － | － | － | － | $\cdots$ | － |  |
| Trent． | － | － |  | － |  | － |  |
| St，Andrew＇s．．．．．．．．．．． | 1，415 |  | 1，408 | 39 | ${ }^{150}$ | － | 3,007 1,345087 |
| Санво．．．．．．．．．．．．．．．．．． | 204，671 | 265，703 | 841，480 | － | 33.433 | － | 1，345，287 |
| Totals， 1964. | 34，119，845 | 45，060， 681 | 11，852，577 | 641，092 | 235，885 | 1，366，770 | 93，276，858 |
| 1965 |  |  |  |  |  |  |  |
| Sault Ste．Marie． | 284． 419 | 198，784 | 492，041 | 719 | 26，814 | 403，232 | 1，408，909 |
| Welland． | 17．205，075 | 28，494，441 | 6，889，171 | 271，440 | 69，379 | 506，090 | 53，436，596 |
| St．Lawrence River．．．． | 16，963，752 | 17，378，975 | 7，947，911 | 353，093 | 128.090 | 608，842 | 43，378，663 |
| Richeliey River | 524 | 12 | 87．259 | 482 | － | － | 87，741 |
| St．Peter＇s．．．． |  |  | － |  | 二 | － | 551 |
| Murray ．．．． | $\square$ | － | 二 | 615 | 二 | － |  |
| Ridean | － | － | 二 |  | 二 |  |  |
| Trent． |  |  | 13 |  |  | － | 13 |
| St．Andrew＇s |  |  | 501 | 155 | 70 |  | 1，624 |
| Canso． | 191，265 | 222，161 | 644，399 | 13 | 24，567 |  | 1，082，405 |
| Totals，1965．．．． | 34，649，827 | 46，294，479 | 16，062， 195 | 626，532 | 246，320 | 1，518，164 | 39，385，117 |

${ }^{1}$ Standard commodity classification．

## 11．－Freight Traftic through Canadian Canals，by Direction and Origin，Navigation Season

 18.55Nore．－Figures include duplications where cargoes pass through two or more canals．

| Canal | Traffe by Direction |  | Origins of Cargo |  |  | Total Cargo |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Up | Down | Canada | United States | Other Countries |  |
|  | tons | tons | tons | tons | tons | tons |
| Sault Ste．Marie． | 543，272 | 863,637 | 1，280，668 | 113，832 | 12.408 | 1，406，909 |
| Welland．．． | 19，974，126 | 33，462． 470 | 26，598，216 | 22，893，879 | 3，945，001 | 53，436．596 |
| St．Lawrence River | 22，174，727 | 21，203，936 | 26，996， 034 | 10，707，038 | 5，675，591 | 43，378，663 |
| Richelieu River．． | 82，951 | 4，790 | 87，741 | － | － | 87，741 |
| St．Peter＇s．．．． | 341 | － 207 | － 551 | － | 二 | －551 |
| Ottaws River | 110 | 505 | 615 | － | － | 815 |
| Rideau．．． | － 10 | － 3 | － 13 | 二 | － | － 13 |
| Trent．．．．＇， | ${ }_{571}^{10}$ | 1．053 | 13 1,624 | － |  | 13 1,624 |
| Canso．．．．．．．． | 708，352 | 374，053 | 1，043，410 | 32.675 | 6,320 | 1，082， 405 |
| Totals． | 43，484，463 | 55，910，654 | 56，048，872 | 33，746，924 | \＄，689，321 | 39，395，117 |

## 12.-St. Lawrence-Great Lakes Trafic using St. Lawrence, Welland and Sault Ste. Marie Canals, 1964 and 1565

| Nots.-Duplications eliminated wherever possible. |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Canals Used | 1064: |  |  | 1965 |  |  |
|  | Upbound Freight | $\left\lvert\, \begin{gathered} \text { Downbound } \\ \text { Freight } \end{gathered}\right.$ | Total | Upbound Freight | $\left\|\begin{array}{c} \text { Downbound } \\ \text { Freight } \end{array}\right\|$ | Total |
|  | tors | tons | tons | tone | tons | tone |
| Trafile using Canadian St. Law-rence-Great Lakes System. | 21,877,865 | 34,891,332 | 54,729,197 | 25,134,325 | 85,787,766 |  |
| St. Lawrence and Ottawa. .......... | 1,8.3, | 1,801,2х2 | *, $=13$ | 4,134,264 | \&,707,260 | -,872, 4,264 |
| St, Lawrence only ........ | 2,9886,875 | 1,522,515 | 4,479,390 | 4, 865, 250 | 1,685,911 | 6,351,161 |
| St. Lawrence and Welland. St $^{\text {L }}$ Le..... | 15,594,530 | 19,221,747 | 34,816,277 | 17,244, 744 | 19,353,303 | 36,598,047 |
| St. Lawrence, Welland and Sault Ste. Marie. | 24.203 |  | 55,521 | 60.469 | 164,722 | 225,191 |
| Welland only ...................... | 2,895, 888 | 13, 574,151 | 16,470,037 | 2,478,901 | 13, 8399,835 | 16,317,888 |
| Welland and Sault Ste. Marie..... Sault Ste. Marie................ | 41,996 324,376 | 32,398 509,203 | 74,394 838,578 | 194,664 288,933 | 106,897 587,098 | 301.561 874,021 |
| Trafile using United States Loeks at Sanlt Ste. Marie. | 10,328,447 | 82,888,582 | 35,917,029 | 11,415,468 | 82,770,873 | 94,186,841 |
| Tetals | 32,766,312 | 117,878,514 | 150, 446,288 | 36,545,793 | 118,508,459 | 155,058,458 |

Since 1950, the traffic through the Sault Ste. Marie canal (Canadian lock and United States locks) has fluctuated between a high of $128,489,000$ tons in 1953 and a low of $70,906,000$ tons in 1959 ; the volume in 1965 was $95,593,250$ tons. Throughout the period, the dominant traffic from a tonnage aspect continued to be iron ore, which also reached its highest point in 1953 at $98,658,000$ tons, dropped to $47,214,000$ tons in 1961 and stood at $65,029,589$ tons in 1965. In 1958, whest replaced soft coal in second place where it has remained, tonnages increasing from $7,478,000$ to $11,223,342$ during the $1958-65$ period; during the same years, other grains usually ranged between 35 p.c. and 60 p.c. of the wheat tonnage, although they were only 28 p.c. of that tonnage in 1961 and 38 p.c. in 1965. Soft coal carried in the 1958-65 period ranged between $6,389,000$ tons in 1958 and $7,948,389$ tons in 1965.

Canadian Use of the Panama Canal.-The use of the Panama Canal as a transport facility for the movement of goods from one Canadian port to another is of relatively minor importance. Of the total of $5,291,000$ long tons of cargo leaving the West Coast of Canada in the year ended June 30, 1965 and passing through the Panama Canal, only 9,000 long tons were destined for Eastern Canadian ports. Similarly, of the 969,000 long tons of cargo leaving Eastern Canadian ports and passing through the Panama Canal, 22,000 long tons were destined for Western Canadian ports. The total tonnage passing through the Panama Canal and arriving in Canadian West Coast ports from any origin, Canada or elsewhere, amounted to 865,493 long tons in the year ended June 30,1965 ; the total from any origin arriving at Eastern Canadian ports after having passed through the Panama Canal was 476,734 long tons.

## Subsection 4.-The St. Lawrence Seaway

Events leading up to the beginning of the St. Lawrence Seaway project and the progress made during the years of its construction are covered in the 1954 to 1959 Year Books. A special article carried in the 1956 edition (pp. 821-829) gives detailed information on Great Lakes-St. Lawrence waterway traffic immediately prior to the beginning of construction on the project and another special article carried in the 1960 Year Book (pp. 851860) covers the story of the Seaway, its new facilities and services and the movement of freight during the second year of its operation.

The St. Lawrence Seaway Authority, constituted as a Corporation by Act of Parliament in 1951 (RSC 1952, c. 242), undertook the construction (and subsequent maintenance and


The St. Lambert lock, where ocean-going vessels flying the flags of many nations begin their journey through the St. Lawrence Seaway and through which they pass again downbound on their way to the sea. The lock is located across from Montreal harbour and close to the site of Expo 67, some of the buildings of which are seen in the background.
operation) of Canadian facilities between Montreal and Lake Erie to allow 27 -foot navigation, concurrently with the construction of similar facilities in the International Rapids Section of the St. Lawrence River by the Saint Lawrence Seaway Development Corporation of the United States. The Seaway was opened to commercial traffic on Apr. 1, 1959 and officially opened on June 26, 1959. With the opening of the Seaway certain ancillary canals were transferred to the jurisdiction of the St. Lawrence Seaway Authority for operation and maintenance purposes. These include the Lachine, a section of the Cornwall

Canal, a portion of the third Welland Canal and the Canadian locks at Sault Ste. Marie. Tolls are not assessed against vessel movements on these waterways and traffic data for them are not included in this Subsection.

Tables 13 and 14 give combined traffic statistics of the St. Lawrence and Welland Canals for the year 1965. Duplicate transits are eliminated so that the figures show the actual total movement of goods through the St. Lawrence Seaway. On this basis, 5,221 ships carrying nearly $24,796,000$ tons of cargo moved upbound through the Seaway in 1965 and 5,337 vessels carrying $35,179,000$ tons moved downbound. Ocean-going ships carried 23.0 p.c. of the total cargoes, lakers 76.9 p.c. and other craft 0.1 p.c. There is still evident an imbalance of loading, 33.4 p.c. of the gross registered tonnage of all vessels upbound being in ballast compared with only 23.7 p.c. of the vessels downbound. Of the total tonnage carried upbound in $1965,19,029,000$ tons were domestic cargo and $5,766,872$ tons were foreign traffic; downbound, 27,408,000 tons were domestic freight and $7,771,506$ tons were carried to and from foreign ports.

## 13.-Summary Statistics of St. Lawrence Seaway Traffic, 1965

(Combined traffe of the Montreal-Lake Ontario Section and the Welland Canal, with duplications eliminated)

| Item | Upbound |  |  | Downbound |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. of Transits | Gross <br> Tons | $\begin{aligned} & \text { Cargo } \\ & \text { Tons } \end{aligned}$ | No. of Transits | Gross | $\begin{aligned} & \text { Cargo } \\ & \text { Tons } \end{aligned}$ |
| Type of Vessel |  |  |  |  |  |  |
| Ocean- |  |  |  |  |  |  |
| Cargo, | 1,256 | 7,747,767 | 5,091,392 | 1,256 | 7.767, 818 | 7,120,385 |
| Laker- |  |  |  |  |  |  |
| Cargo. | 2,661 | 21,325,013 | 16,537,207 | 2.719 | 21,713,518 | 26,417,538 |
| Tug and barge | 137 | 191,403 | 191,015 | 140 | 1204,601 | 327,209 |
| Tanker...... | 553 | 1,655,538 | 2,144,706 | 564 | 1,673,636 | 521,406 |
| Other crast ${ }^{1}$, | 489 | 182,630 | 2,696 | 533 | 180.192 | 4,811 |
| Totals. | 5,221 | 32,347, 16 | 24,795,958 | 5,397 | 32,784,520 | 35,179,039 |
| Type of Cargo |  |  |  |  |  |  |
| Bulk. | 2,002 | 13,997,631 | 19,571,305 | 3,101 | 23, 951,463 | 32,285,219 |
| Genersal. | 866 466 | $5,052,386$ $2,381,599$ | $3,867.806$ $1,356,847$ | 101 | 476,315 $3,470,396$ | 2,768,979 |
| Paspenger ${ }^{\text {m }}$ | 145 | 2,31,246 | 1, | 145 | - 4,246 | $\xrightarrow{+}$ |
| In Ballast- | 162 | 1,363, 239 | - | 107 | 941,710 |  |
| Laker..... | 1,248 | 1, $9,375,833$ | 二 | 786 | 3,775,461 |  |
| Otber. | 1.332 | 172,082 | - | 374 | 164,929 | - |
| Type of Traffic |  |  |  |  |  |  |
| Domestio- |  |  |  |  |  |  |
| Canada to Canada ...... | 1,585 | 7,272,814 | 5,447,054 | 1,984 | 10,774, 1144 | $10,760,663$ 70,231 |
| Canada to United States.......... | 1,895 8 |  | 13,269,139 | $\begin{array}{r}1 . \\ 1 \\ \hline\end{array}$ |  |  |
| United States to Canada......... | 8 395 | 31,467 641,429 | 3,321 309,572 | 1,584 424 | $12,560,970$ 590,991 | $\begin{aligned} & 15,985,+54 \\ & 811,276 \end{aligned}$ |
| Foreign- |  |  |  |  |  |  |
| $\xrightarrow[\text { Canads- }]{\text { Import }}$ | 248 | 1,596,808 |  |  |  |  |
| Export, ................................ | 240 | 1,496,808 | $\xrightarrow{1,020}$ | 275 | 1,826,144 | 1,059,775 |
| United StateaImport. | 1,092 | 7,048,479 | 4,738,344 | 1.069 | 6.895, 908 | 6, $\overline{711,781}$ |
| Export............................ | $\rightarrow$ |  |  | 1,069 | 6,895,903 | 6,711,781 |

[^268]
## 14.-St. Lawrence Seaway Traffic classified by Type of Cargo, 1365

(Combined traftic of the Montreal-Lake Ontario Section and the Welland Canal, with duplications eliminated)

| Commodity | Cargo Tons | $\begin{gathered} \text { P.C. of } \\ \text { Total } \end{gathered}$ | Commodity | Cargo Tons | P.C. of Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Agricultural Products. | 15,495,584 | 32.5 | Forest Praducts. | 310,171 | 0.5 |
| Wheat. | 9,461, 850 | 15.8 | Pulpwood. | 214.138 | 0.4 |
| Cora. | 3,895,033 | 6.5 | Other forest products. | 90,033 | 0.2 |
| Soybeans ....................... | 1,778,664 | 8.0 |  |  |  |
| Barley........................... | $1,548,509$ 044,018 | 2.6 1.6 | Manufactures and Miscelinneous | 10,815, ${ }^{\text {3,127 }}$ | 18.0 5.2 |
| Flaxseed | 383, 116 | 0.6 | Fuel oil. | 2,616,239 | 4.4 |
| Soybean oil cake and meal | 321,599 | 0.5 | Newsprint | 542,497 | 0.9 |
| Flour, wheat. | 235,911 | 0.4 | Gasoline | 371,743 | 0.6 |
| Beans and peas | 221.674 | 0.4 | Food products | 348, 629 | 0.6 |
| Malt. | 97, 846 | 0.2 | Pig iron. | 321, 545 | 0.5 |
| Rye. | 87,513 | 0.1 | Chemicals | 245, 841 | 0.4 |
| Other sgriealtural producta...... | 519,851 | 0.9 | Lubricating oil and grease | 231,384 | 0.4 |
|  |  |  | Sugar.......... | 193, 702 | 0.3 |
| Animal |  |  | Petroleum products, other | 186,475 | 0.3 |
| Packing honse products, edibie. . | 145,128 | 0.2 | Rıbber, crude, natural, synthetic | 175,720 | 0.3 |
| Hides, Ekins and peltr........... | 86.613 | 0.1 | Scrap iron and steel.............. | 117, 285 | 0.2 |
| Other animal products. | 193,396 | 0.3 | Sodium products. | 132,293 | 0.2 |
|  |  |  | Iron and steel, nails, wire | 116.764 | 0.2 |
|  |  |  | Tar, pitch and creosote.. | 106,947 | 0.2 |
| Mineral Products............... | 28,045,438 | 48.7 28 | Syrup and molasses. | 91,974 | 0.2 |
| Bituminous coal | 17.187, 202 | 13.0 | Machinery and mschines......... | 88.903 | 0.1 |
| Stone, ground or erushed. ........ | 872,513 | 1.5 | laneous | 1,617,666 | 2.7 |
| Balt.............. | 632.917 | . |  |  |  |
| Clay and bentonite | 208,090 | 0.3 | Package Frelsht. | 903,465 | 1.5 |
| Coke. ${ }^{\text {Gravel and san }}$ | 207, 658 | 0.3 | Package freight-domestic. | 888.864 | 1.5 |
| Petroleum, crude................... | 161,873 130,548 | 0.3 | Package freight-ioreign........ | 16,602 | . |
| Aluminum ore and concentrates. Other mineral products. | $\begin{aligned} & 113,807 \\ & 736,319 \end{aligned}$ | 0.2 1.2 |  | 974, 888 | 104. |

On the Montreal-Lake Ontario Section, upbound traffic increased 19.4 p.c. in 1965 over 1964 and downbound traffic 10.2 p.c. The former was accounted for almost entirely by the volume of iron ore shipped from St. Lawrence ports to Hamilton and Lake Erie, and the latter by overseas shipments of wheat. There were 251 more upbound transits and 300 more downbound transits in 1965 than in 1964, indicating a slight increase in the number of vessels using this portion of the Seaway. Bulk cargo comprised 87.1 p.c. of the total traffic through the Section in 1965, the principal commodities through the St. Lawrence canals being iron ore, wheat, corn, fuel oil, barley and bituminous coal. Traffic patterns show that 29.5 p.c. of the total movement was between two Canadian ports, 39.1 p.c. moved between Canadian and United States ports and 31.1 p.c. consisted of foreign trade to and from Canada and the United States. The small remainder was traffic between two ports in the United States.

There were 8,384 transits through the Welland Canal in 1965, with a cargo volume of 19,949,000 tons upbound and $33,472,000$ tons downbound; bulk cargo accounted for 91.2 p.c. of the traffic. Although many vessels pass through both the St. Lawreoce and the Welland Cauals on "through" trips, there is a substantial amount of local traffic between Great Lakes ports which involves only the Welland Canal. These movements are largely of iron ore, grain and coal. The Welland Canal traffic was $10,073,000$ eargo tons greater than that reported for the Montreal-Lake Ontario Section.

Income of the St. Lawrence Seaway Authority for 1965 amounted to $\$ 16,848,181$, compriaing toll revenue of $\$ 15,480,631$ assessed for transits through the Seaway locks between Montreal and Lake Ontario and sundry revenues (rentals, wharfage, bridge revenue, etc.) of $\$ 1,367,550$. Total expenses for 1965 amounted to $\$ 12,414,128$, of which operation and maintenance expenses amounted to $\$ 10,472,700$ and regional headquarters, headquarters administration and engineering expenses amounted to $\$ 3,468,899$, less an allocation to non-toll canals of $\$ 369,761$ and to construction cost of $\$ 1,157,710$.

Pleasure craft locked through the Montreal-Lake Ontario Section canals numbered 353 upbound and 420 downbound in 1965, and those locked through the Welland Canal numbered 143 upbound and 145 downbound.

## Subsection 5.-Marine Services of the Federal Government

The services covered in this Subsection deal with the Canadian Coast Guard and aids to navigation, including the maintenance of the St. Lawrence River Ship Channel, steamship inspection and pilotage service.

Canadian Coast Guard.-The Canadian Coast Guard, known by that name only since January 1962, has played a vital part in Canada's maritime economic and industrial development since Confederation. At that time several previously established government marine organizations were brought together as a single marine service, founding the fleet that became the responsibility of the Department of Transport when it was established in 1936.

From a small beginning, the fleet has expanded into an organization consisting of more than 200 vessels of all types, of which nearly 50 are of a larger size. Of these, 31 measure more than 1,000 tons gross. They include 10 fully strengthened icebreakers and eight lighthouse supply-and-buoy ships with icebreaking capabilities. These vessels comprise in numbers the world's second largest icebreaking force. The greater part of the fleet's expansion has occurred within the past few years to meet a new and fast-growing requirement for icebreaker support of shipping activities in the Canadian Arctic during the summer and for commercial shipping in the Gulf of St. Lawrence in the winter. The Department's concern with marine search-and-rescue activities bas also increased, not only in the field of commercial shipping but also in connection with the mushrooming public interest in pleasure boating with its attendant safety problems.

The duties of the Canadian Coast Guard are civilian in nature and no armaments are carried on the ships. It maintains and supplies shore-based and floating aids to navigation in Canadian waters, including the Atlantic and Pacific coastal areas, the St Lawrence River and Great Lakes, the channels of both the eastern and western Arctic, Hudson Bay, the Mackenzie River system and other inland waters. The territory covered is vast and the duties involved are extensive.

Since its beginning, the fleet has carried out icebreaking as one of its important undertakings. In its earliest years, such work was done mainly to aid shipping in eastern port areas and in the St. Lawrence for whatever winter period was allowed by weather conditions and the limitations of ships of that area. Icebreaking has also been carried out through the years at Montreal to prevent floods caused by ice jams in the river. When the development of the sea route from Cburchill, Man., to Europe became a factor in the country's maritime economy, icebreaker assistance was extended to commercial shipping using that route. Since 1954, as a result of the opening up of the Canadian Arctic, the Department has handled all icebreaking requirements in these waters, extending to within a few hundred miles of the North Pole.

Arctic operations necessitate ice reconnaissance services, which are carried out by fixed wing aircraft flying out of such ports as Churchill, Man., and Frobisher Bay and Resolute Bay in the High Aretic. These flights are under the direction of the Department's Meteorological Branch and provide information on ice conditions in the sea lanes in all areas where the convoys operate. Helicopters, based aboard the icebreakers, are used for close-range reconnaissance. They carry trained observers provided by the Meteorological Branch and their ability to spot leads through the ice, which cannot be seen from the ship, has resulted in tremendous savings in time for the convoys. The helicopters are also very useful for ship-to-shore personnel movements and for carrying light freight. As an indication of the growth of Arctic re-supply operations handled by the Canadian Coast Guard, the cargo handled, which was approximately 8,000 tons in 1954, had increased to 100,000 tons in 1965.

A Canadian Coast Guard Officer Training College, established in 1965 by the Department of Transport at Sydney, N.S., will provide a four-year course for students who will graduate with certificates as either Marine Engineer, First Class, or Master Mariner. The first class comprised forty cadets from all across Canada.

Aids to Navigation.-The Canadian system of aids to navigation is similar to that of other North American countries. Such aids maintained by the Department of Transport for Canadian and contiguous waters consist of buoys, lightships, lighthouses, day beacons, radio beacons and two electronic networks operating on the hyperbolic principle-Loran and Decca. The numbers of danger signals maintained during the years ended Mar. 31, 1965 and 1966 were:-

| Type of Signol | 1964.65 | 1965-66 | Type of Signal | 1964-65 | 1985.66 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. | No. |
| Lights... | 3,447 | 3,536 | Lighted and combination |  |  |
| Lightships............... | 2 | 2 | lighted whistling and |  |  |
| Light-keepers............ | 915 | 895 | bell buoys............ | 1,582 | 1,676 |
| Fog whistles and sirens... | 54 | 69 | Unlighted bell and whistling buoys., | 43 | 20 |
| Disphones and tytons..... | 271 | 273 | Electronic signals. | - | 22 |
| Mechanical bells and gongs | 10 | 10 | Unlighted beacons and |  |  |
| Eand tog horns and bells. | 81 | 66 | buoys.. | 12,786 | 13.037 |

All aids incorporating light or sound devices are listed in the Department of Transport annual publication List of Lights and Fog Signals. Information on the radio beacons and on Loran and Decca is published in Radio Aids to Marine Navigation.

Navigable waters have been improved greatly by dredging in channels and harbours, by the removal of obstructions, and by the building of remedial works to maintain or control water levels. Incidental to these developments of navigable waters are works to guard shorelines and prevent erosion, and for the control of roads and bridges that cross navigable channels. Icebreaking operations are continuous throughout the winter.

St. Lawrence Ship Channel.-This channel extends from about 40 miles below Quebec City to the foot of the Lachine Canal at Montreal, a distance of 200 miles. About 130 miles of this distance is dredged channel.

Above Quebec the channel has a limiting depth of 35 feet at extreme low water and a minimum width of 550 feet, with additional width up to 1,500 feet at all curves and difficult points, and additional anchorage and turning areas. Widening of the channel to a minimum width of 800 feet, commenced in 1952, is about 69 p.c. completed. This section comprises about 115 miles of dredged channel. Below Quebec the limiting depth of dredged channel, about 15 miles in length, is 30 feet at low tide, with a width of 1,000 feet. An average tidal range of 15 feet in this area provides ample depth for any vessel using the St. Lawrence route. Above Quebec, maintenance requirements as a result of silting in this dredged channel are relatively minor but below the city silting is more pronounced because of tidal action.

The ship channel is well defined by buoys and the centre marked by range lights, permitting uninterrupted day and night navigation throughout the open season from about mid-April to early Decernber. The movements of all shipping, weather and ice conditions and obstructions to traffic throughout the St. Lawrence waterway from Fame Point, Que., to Kingston, Ont., are recorded and made available to all concerned through a series of reporting stations known as the Marine Reporting Service.

Steamship Inspection.-The Steamship Inspection Service was established by authority of the Canada Shipping Act. Its functions include the formulation and subsequent enforcement of regulations concerned with the approval of design of hulls, machinery and equipment of ships; inspection during construction; periodic inspection and the issue
of inspection certificates; the assignment of load lines; the conditions under which dangerous goods may be carried in ships; the protection against accident of workers employed in loading and unloading ships; the prevention from pollution of Canadian territorial waters by oil from ships; control of pollution of the atmosphere by smoke emitted by ships; control of the powering, equipment and load limits of small vessels; and the certification of marine engineers. The Board also prepares correspondence courses in marine engineering for use in Marine Engineering Schoola now controlled by the Department of Labour.

The Chairman and the Board of Steamship Inspection are located at Ottawa and field offices are maintained in the principal ocean and inland ports. A total of 1,872 vessels of Canadian ownership or registry, including 502 passenger ships, 144 new ships built in Canada, 37 ships built outside Canada for registry in Canada, 27 converted or reconditioned ships and 51 vessels registered or owned elsewhere, were inspected during the year ended Mar. 31, 1966.

Pilotage.--Pilotage service functions under the provisions of Part VI and Part VIs of the Canada Shipping Act. Wherever a pilotage district has been created by the Governor in Council, qualified pilots are licensed by the pilotage authority of the district. There are in Canada 22 pilotage districts, in nine of which the Minister of Transport is the pilotage authority (see Table 15); in each of the other districts the authority is a local body appointed by the Governor in Council. There are also three districts that are administered jointly by Canada and the United States.
15.-Pilotage Service, by Pilotage District, 1964 and 1965

| District | 1964 |  | 1965 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Pilotage } \\ & \text { Trips } \end{aligned}$ | Net <br> Registered Tonnage | Pilotage <br> Trips | Net Registered Tounage |
|  | No. |  | No. |  |
| Bras d'Or Laken, N.S. | 336 | 624.472 | 357 | 676,883 |
| Bydney, N.S. | 1.716 | 6,214,466 | 1.885 | 7,982.780 |
| Halifar, N.S. | 3,760 | 15,965, 172 | 3,708 | 16,320.782 |
| Saint Jobn, N.B. | 1,417 | 5, 925.320 | 1.447 | 5,975,187 |
| Quebec, Que... | 8.191 | 41.726.354 | 8.578 | 45,520.351 |
| Montreel, Que. | 10,321 | 42,735,994 | 9,835 | 46,405,717 |
| Cornwall, Ont.. | 2,724 | 9,924,893 | 3,022 | $\overline{768} 751$ |
| Churehill, Man.... | 118 9,058 | 705,515 $87,618,095$ | 9,119 | 768,751 $37.410,635$ |
| Brich Columbia |  |  |  | 37. |
| Totals. | 37,641 | 161,440,281 | 87,866 | 161,*61,485 |

## Section 2.-Financial Statistics of Waterways

The principal statistics available on the cost of facilities for water-borne trafic consist of the record of public expenditure on waterways. Such expenditure may be classified as capital expenditure, or investment and expenditure for maintenance and operation. Revenue from operation is also recorded. The major part of the capital expenditure for the permanent improvement of waterways is provided by the Federal Government, that by municipalities and private industry being confined almost entirely to terminal or dockage facilities.

The figures available of federal capital expenditure on waterways are contained in the Public Accounts and the annual reports of the Departments of Transport, Public Works and Finance and in the annual report of the St. Lawrence Seaway Authority. However,
for several reasons, these figures cannot be regarded as an accurate indication of the present worth of the undertakings represented and therefore are not included here; the one exception is the capital expenditure made by the National Harbours Board on facilities under its jurisdiction. The capital values of the fixed assets administered by the Board at Dec. 31,1965 amounted to $\$ 446,143,009$; this figure includes expenditure on all buildings, machinery and durable plant improvements less deductions for depreciation and the serapping or abandonment of plant, and therefore represents a fair approximation of the present value of the properties. The total amount advanced by the Federal Government to the National Harbours Board for capital expenditure during 1965 was $\$ 3,894,186$, distributed as follows: Quebec, Que., \$747,467; and Champlain Bridge (Montreal), \$3,146,719.

Waterways Expenditure and Revenue.-Expenditure under this heading (Tables 16 to 18 ) is mainly for the operation and maintenance of various facilities for water transport but, unfortunately, the line between operation and maintenance expenditure is not as finely drawn as is desirable. Revenue in connection with waterways of the Department of Transport, the Department of Public Works and the St. Lawrence Seaway Authority is shown in Table 19.

To facilitate water transportation, the Federal Government expends annually, in addition to the recurrent expenditure shown here, a considerable amount to cover deficits of the National Harbours Board, and for mail subsidies and steamship subventions as shown in Table 21. Operating revenue and expenditure of facilities administered by the National Harbours Board are shown separately in Table 20.

## 16.-Department of Transport Expenditures on Marine Service, Years Ended Mar. 31, 1964 and 1965

| Service | 1964 | 1985 |
| :---: | :---: | :---: |
|  | \$ | \$ |
| Administration, including agencies. | 1,186,059 | 1,269,740 |
| Marine Works Brancb- |  |  |
| Aids to Navigation Division- |  |  |
| Administration, operation and msintenance. | $8,978,572$ $5.648,701$ | $7,207,822$ $3,700.880$ |
| Canals Division-. | 6.648,301 | 3,700,880 |
| Administration, operation and maintenance. | 2,544,425 | 2,565,616 |
| Conatruction. | 1,803,092 | 4,431,647 |
| Marine Hydraulics Braach- <br> Ship Chamnel Service- <br> Administration, operation and maintenance of St. Lawrence and Saguenay <br> Rivers. | 1,101,607 | 1,341,079 |
| Marine Regulations Branch- |  |  |
| Steamahip Inspection Division, | 1,180,505 | 1,623,932 |
| Nautical and Pilotage Division- |  |  |
| Nautical Servicea... | 424,407 | 447,055 |
| Administration. operation and maintenance. | 1,516,016 | 1,608,322 |
| Pensions to former pilots.................... | 1,200 | 1,200 |
| Marine reporting eervice.......................... | 124.841 | 128.162 |
| Payment to Newfoundland re Pilotage Commiseion | 8,451 193,423 | 594,502 |
| Marine Operations Branct-Administration, operation and mainterance. | 23,250,529 | 23,147,902 |
| 8t. Lawrence Seawsy Authority- <br> Operating deficit and capital requirements of canale and works entrusted to the St. Lawrence Seaway Authority | 2,883,620 | 1,887,006 |
| Totals. | 48,845,448 | 49,934,955 |

## 17.-Department of Public Works Expenditure on Waterways (Harbours, Rivers, Roads and Bridges), Years Ended Mar. 31, 1964 and 1965

Note.-Compiled from the annual reports of the Department concerned by the Comptroller of the Treasury, Department of Finance. Excludes expenditurea on harbours administered by the National Harboure Board as shown in Table 20.

| Year and Province or Territory | Dredging | Construction | Improvements and Repairs | Staff and Sundries | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1964 | \$ | * | \$ | \% | $\delta$ |
| Newfoundland | 531,156 | 4,030,792 | 579,181 | 270,660 | 5,411,789 |
| Prince Edward Island. | 444,071 | 361,829 | 237,655 | 9,554 | 1,053,109 |
| Nova Scotia ......... | 440,450 | 1,564, 427 | 423,074 | 429 | 2, 428,380 |
| New Brunswick | 1,151,948 | 1,024,046 | 236,708 | 8,874 | 2,421,576 |
| Quebec. | 384,715 | 3,178,395 | 902,987 | 335,980 | 4,800,027 |
| Ontario. | 485.342 | 2,520, 184 | 432.330 | 49,371 | 3,487,227 |
| Manitoba | 260,712 | ${ }^{7} 747$ | 64,316 | 50,670 | 366.445 |
| Saskatchewan | 9 | 66,494 | 5.285 |  | 71,779 |
| Alberts... | 280,799 | 7,397 | 12,485 | 29,962 | 330,643 |
| British Columbia. | 1,309,261 | 1,307, 109 | 390.343 | 227,038 | 3,233,751 |
| Yukon and Northwest Territorjes. |  | 48,889 | 50,189 |  | 90, 078 |
| Candia, 1964. | 5,278,454 | 14,109,369 | 2,334,303 | \$82,538 | 23,703,804 |
|  | Dredging ${ }^{1}$ | Construction and Improvements | Repsiry and Upkeep | Staff and Sundries | Total |
| 1565 | * | \$ | * | \% | \$ |
| Newfoundland. | 309,356 | 4,132,253 | 658,205 | 377,458 | 5,477,269 |
| Prince Edward Island | 305,444 102,059 | - 421,935 | 245,299 | $\begin{array}{r}36,504 \\ \hline 124\end{array}$ | 1,019,182 |
| New Brunswiek | 198,424 | 2,388,239 | 315,220 | 2,232 | 2,904,115 |
| Quebec. | 315,852 | 5, 390,418 | 958,957 | 355,565 | 7,020,792 |
| Ontario. | 3.061 | 4,494,422 | 381,785 | 38,807 | 4,927,075 |
| Manitoba..... | 237,709 | 124,925 | 41.778 | 152,350 | \$56,762 |
| Saskatchewan |  | 41,823 | 7,067 | 96,110 | 145,000 311124 |
| Alberta. ${ }^{\text {British Columbia }}$ | 264,035 | 6.456 2.952 .444 | 40,633 870,043 | $2 \overline{-88} .691$ | 1411,124 $4,374,855$ |
| Yukon and Northwest Territories. | -781 | 2, 79,138 | 80.01 |  | 79,138 |
| Canada, 1365 | *,493,717 | 22,588,609 | 3,787,729 | 1,352,741 | 34,202,736 |

${ }^{1}$ Includes expenditures for dredging plants.

## 18.-St. Lawrence Seaway Authority Expenditures, 1964 and 1965

| Item | 1964 | 1965 |
| :---: | :---: | :---: |
|  | \$ | \% |
| Administration- |  |  |
| Headquarters. | 1,273,456 | 1,348,237 |
| Regional. . | 741,209 | 960,515 |
| Engineering. | 833,103 | 1,160,147 |
| Operation and Maintenance- |  |  |
| Salaries and wages... | 4,272,947 | 4,779,185 |
| Employee benefits.. | 419,674 | 420,253 |
| Maintenance materials and services. | 2,262,848 | 3,714,987 |
| Grants in lien of municipal taxes.... | 366,666 | 434,405 |
| Otber operstion and maintenance expenses. | 673,089 | 908,291 |
| Totals.. | 10,243,40 | 13,817,08\% |

## 19.-Federal Government Revenue in connection with Waterways, Years Ended Mar, 31, 1964 and 1845

Nore.-Compiled from annual reports of the Department of Transport, the Pudic Accounts and the annual reports of the St. Lawrence Seaway Authority.

| Department and Item | 1964 | 1985 | Department and Item | 1864 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Department of Transport | \% | \% | Department of Public Forks | $\$$ | \$ |
| Marime Services. | 6,538,235 | 8,763,137 | Earnings of Dry Doclis........ | 463,816 | 485,985 |
| Csuala. | 384.088 | 415,557 | Champlain Dock, Lauzon..... | 258,956 | 225.470 |
| Fines and forieiture | 2.128 | 2,288 | Lome Dock, Lauzon. . . . . . . . | 67,905 | 51.255 |
| Steamship inspection | 242,554 | 205,548 | Esquimalt new dock | 134,360 | 18.815 |
| Whart revenue. | 922,446 | 1.464.558 | Selkirk repair slip............. | 2,595 | 3,425 |
| Harbour dues. | 332.104 | 398,733 |  |  |  |
| Measuring surveyor's fees... | 1.396 | 2,481 | Works and Plants Leased...... | 46,344 | 77,383 |
| Examination-masters' and |  |  | Kingston dry dock............. | 12,100 | 12.100 |
| mates' fees........i......... | 13.988 | 15.803 | Ferry privileges,.............. | 476 | 351 |
| Pilotas licence fees (pilotage)... | 380 394,231 | 589 633.237 | Dredges and plants........... | 33,768 | 84,888 |
| Pilot boat fees | 253.400 | 274,550 | Rents from water lots, etc...... | 73,281 | 62,287 |
| Shipping fees... | 12,124 | 11,429 | Refunds of expenditure reported |  |  |
| Marine steamer earnings. | 3, 469.766 | 4.833,276 | in previous years.............. | 215,210 | 547,893 |
| Rentals-water lots and lighthouse sites. | 52,076 | 59.088 | Sundry receipts, test borinss, etc. | 4.167 | 3,584 |
| Sale of land, buildings, etc. | 26, 994 | 02,306 | Totals, Departm |  |  |
| Merchant seamen's identity certificates |  |  | bilic Work | 802,318 | 1,157,065 |
| Miscellanents. | 114,843 | 130, 785 |  |  |  |
| Refunds, previous year's expenditures <br> Port frarden fees. | $\underset{75,473}{39,612}$ | 95.385 76.915 | St. Lawrence Seaway Authorlty | $\underset{\text { Year }}{\text { Calendar }}$ | Calendar Year |
|  |  |  | Tolls assegse | 13,5.44,436 | 15,450,631 |
| Board of Transport Commi |  |  | Rentals | 476, 550 | 567,214 |
| sioners | 2,271 | 3,153 | Wharfa | 248,052 | 156.585 |
|  |  |  | Miscellaneo | 781,069 | 643,751 |
| Totak, Department of Transport. | 6,540,506 | 8,766,290 | Totals, St. Lawrence Seaway Authority. | 15,050,107 | 16,848,181 |

## 20.-Operating Revenue and Expenditure of Harhours, Elevators and Bridges under the National Harbours Board, 1964 and 1s65

| Herbour and Year | Operating Revenue | Operating Expenditure | Net Operating Income | Harbour and Year | Operating Revenue | Operating Expenditure | Net Operating Income |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | 5 | 8 |  | * | \% | 8 |
| St. John's, Nild.- | 247.574 | $106,208$ | 141,366 | Jacques Cartier <br> (Montreal) - |  |  |  |
| Halifax - |  |  |  | 1964....... | 158,974 | 294, 129 | -135.155 |
| 1964. | 2,608,074 | 2,153,383 | 454,691 | 1965 | 129.084 | 362,070 | -232.986 |
| 1965. | 2,650,613 | 2,381,401 | 269,212 |  |  |  |  |
| Saint John- |  |  |  | Champlain Bridge (Montreal)- |  |  |  |
| 1964....... | 1,066,583 | 910,410 | 156,173 | 1964............... | 624,879 | 407.889 | 216,900 |
| 1965. | 1,186,522 | 1,071,274 | 115,248 | 1885................ | 990.976 | 454,251 | 536.725 |
| $\begin{gathered} \text { Chicoutimi- } \\ 1964 \ldots \ldots \ldots . . \end{gathered}$ | 154,353 | 34,450 | 119,903 | Prescott Xlerator1984 | 779,973 | 429.017 | 350,956 |
| 1965. | 167,617 | 46,625 | 120,992 | 1865............... | 951,824 | 479,708 | 472.116 |
| Queber- |  |  |  | Port Colborne |  |  |  |
| 1964 | 3,452,081 | 2.278.162 | 1,173.919 | 1964..... |  |  |  |
| 1065 | 4,202,845 | 2,957,283 | 1,245,562 |  | 405.026 376.810 | 288,817 279,135 | $\begin{array}{r} 116,209 \\ 97,675 \end{array}$ |
| TroisoEivières- |  |  |  | Churchlil- |  |  |  |
| $1964 .+\ldots . . . . . . .$. | 841.544 | 132,041 | 709,503 | 1964. | 1,401,910 | 1,111,859 | 290, 251 |
| 1965. | 990.646 | 182.201 | 808, 445 | 1965. | 1, 499,131 | 1.149,813 | 349,318 |
| Montreal- |  |  |  | Vancouver- |  |  |  |
| 1964. | 13,617,423 | 8.510,669 | 5,106,754 | 1964. | 5,775.124 | 3.404.860 | 2,370.264 |
| 1965 | 15, 880, 480 | 8,794,855 | 7,085,625 | 1965. | 5,935,367 | 3,864,389 | 2,270,978 |

[^269]Shipping Subsidies.-Table 21 shows the net amount of steamship subventions paid in connection with contracts made for the maintenance of essential coastal and inland water shipping services. The payment of these subventions is administered by the Canadian Maritime Commission under statutory authority.
21.--Steamship Subventions, Years Ended Mar. 31, 1965 and 1966

${ }^{1}$ Recaptured.

## PART V.-GIVIL AIR TRANSPORT

## AN OUTLINE OF THE DEVELOPMENT OF CIVIL AIR TRANSPORT IN CANADA*

Canada achieved distinction in pioneering early flight when, in 1907, Dr. Alexander Graham Bell formed the Aerial Experimental Association at Baddeck in Nova Scotia, the objective of which was to build "a practical aerodrome or flying machine driven through the air by its own power and carrying a man" This was accomplished when F. W. Baldwin became the first Canadian and the first member of the British Empire to fly a heavier-thanair machine when he flew at Hammondsport, New York, in April 1908. Another member of the Association, J. A. D. McCurdy, was the first man to fy in Canada when, on Feb. 23, 1909, he flew the famous Silver Dart, which he had been instrumental in building, for half a mile from the ice of Baddeck Bay. Unfortunately, these splendid beginnings produced

[^270]no immediate results in Canada. Even throughout World War I there was little improvement in the official attitude toward flying, although Canadians by the thousands joined the Royal Flying Corps, the Royal Naval Air Service and, later, the Royal Air Force, where they covered themselves with glory. During 1914-18, nearly a thousand airmen were trained in Canada for service overseas and parts for some 2,900 training aircraft were built in Toronto. But these activities, although receiving some Canadian official support, were primarily under British direction and, at the end of hostilities, training was discontinued and manufacturing of aircraft parts ceased.

However, many of the thousands of aviators returning from overseas, who were determined to fly, bought war-surplus aircraft and started careers in civil flying with glowing enthusiasm but little success. Indeed it was not until about 1925 that the aeroplane had established a firm place in the Canadian economy in such fields as forest protection and aerial photographs. Many other countries were developing inter-city airmail services but Canada, possessing a surplus of railways, deliberately pursued a policy of encouraging the natural use of the aeroplane and neglecting the development of inter-urban services.

The policy had compensating features. The "bush" pilots, flying small aircraft equipped with skis or pontoons into the hinterland with little or no navigational assistance, did a mammoth job in contributing to the development of many great mining projects. So great were their accomplishments that, by 1929, they carried as much air freight as was carried by air in any country of the world and, in addition, delivered large volumes of mail to outlying communities. Even during the depression of the 1930 s , bush or non-scheduled flying continued to expand, much of it accounted for by activity in gold mining, which had been encouraged by the increase in the price of gold from $\$ 22$ to $\$ 35$ an ounce. In 1930, 100 licensed carriers were doing business and by 1936 the number had increased to 130. Many of these were amall operations but one-Canadian Airways Ltd, with headquarters in Winnipeg, which had amalgamated with several of the larger carriers in 1929-30 -offered its services in every part of Canada. The Canadian National and Canadian Pacific Railways held equal shares in Canadian Airways and the expectation was that this company would operate the transcontinental airmail services when such a course of action should become feasible.

Inter-city airmail services in both Eastern Canada and the Prairie Provinces were started in 1930 but economies imposed by the great depression closed these services down in 1932. However, year by year during the depression, the Federal Government had been building and improving airports, installing aids to navigation, training and expanding meteorological services and improving radio and other communication systems until, by 1937, it was practicable to start an inter-city, day-and-night, all-weather service operating on schedule.

During the immediate prewar and early World War II years, several far-reaching changes took place in aviation on the domestic front. Having learned by experience the folly of permitting uncontrolled expansion in the field of rail transport, the Government was determined to sponsor only one major airline company to operate transcontinental and international services and, since the company so favoured would exercise a virtual monopoly in its particular field, the Government was also determined not to permit complete control to pass into private hands. Negotiations along these lines proved unsatisfactory to Canadian Airways Ltd. and to the Canadian Pacific Railway, and steps were taken to create a new company to operate the transcontinental services.

The Department of Transport Act, passed by Parliament in 1936, took the administration of civil aviation away from the Department of National Defence and placed it in the hands of the newly formed Department of Transport. The following year, the TransCanada Air Lines Act became law, making provision for the creation of an instrument to operate inter-urban airmail and passenger services to meet both domestic and international requirements. Trans-Canada Air Lines (TCA), as a Government-owned company, was organized with Canadian National Railways the sole shareholder and the new company became Canada's "chosen instrument" in the field of civil aviation.

TCA survey flights began in July 1937 and a scheduled service between Vancouver and Seattle was taken over from Canadian Airways in September of that year. Thereafter, expansion was rapid. An airmail and express service between Lethbridge and Edmonton was started early in 1938; a similar service between Montreal, Ottawa, Toronto, Winnipeg and Vancouver was in operation by December of the same year and in April 1939 a full-scale mail and passenger service from Montreal to Vancouver was inaugurated; in November 1939 a mail service on an experimental basis was extended to Moncton and by February 1940 this, too, was open to passenger traffic; and in August 1940 a full-scale service between Toronto and Windsor by way of London was in operation. International services followed in quick succession-Toronto to New York in May 1941; and Gander to St. John's, Nfld., by way of Moncton, N.B., and Sydney, N.S., in May 1942. Thus, in a period of less than four years, Canada was possessed of a transcontinental day-and-night, all-weather mail and passenger service connecting all its principal cities.

In the meantime, World War II was effecting many changes in Canadian civil aviation. The British Commonwealth Air Training Plan, which was established in Canada in 1939 to train aircrews from every part of the Commonwealth, graduated more than 131,000 personnel before the end of hostilities. This entailed the building or expanding and equipping of some 270 airports and also the setting up of a vast training and administrative organization. A transatlantic ferry service was inaugurated in 1940, funnelling bombers from St. Hubert, and later Dorval, in Quebec through Gander and Goose, Newfoundland, to Britain. Before the end of hostilities, more than 35,000 aircraft had spanned the gap between the two continents and fying the Atlantic had become commonplace.

In January 1942, the Canadian Pacific Railway actively entered the aviation field by buying up ten of the largest private air carriers and incorporating them into one company under the name of Canadian Pacific Airlines (CPA). The new company, for the time being, continued to serve the outlying areas, as had been done by the private companies, and to provide a complementary feeder service to TCA.

In August 1942, TCA added to its duties by taking over the operation of the Canadian Government Trans-Atlantic Air Service on behalf of the Department of Transport. This Service was originally conceived as a wartime measure only, for the purpose of carrying mail to Canadian troops in Europe, although it later evolved into the TCA Trans-Atlantic Service.

By 1944, aviation was playing such a vital part in the Canadian economy that it was necessary to set up a new administrative body-the Air Transport Board-to rationalize its expansion with special regard to public convenience and necessity, rates and tariffs, and the financial aspects of airline operations. The Board of Transport Commissioners had previously performed a somewhat similar function but it was considered advisable to place the affairs of aviation in the hands of a body dedicated solely to that purpose. Questions relating to safety of operation were left in the hands of the Department of Transport. These procedures brought Canada's regulations into line with those in vogue in the most advanced countries in the world, for the country had assumed an almost embarrassingly prominent position in world aviation.

At the end of the War, Canada held the fourth world place in aviation, being superseded only by the United States, the U.S.S.R. and Britain. In recognition of this fact, Montreal was selected as the seat of the permanent Headquarters of the International Civil Aviation Organization (ICAO) established by the International Aviation Convention held in Chicago in December 1944: also, ICAO's sister organization, the International Air Transport Association (IATA) which represents all the major world airlines, set up headquarters in Montreal. The latter company was incorporated by a special Act of the Canadian Parliament on Dec. 18, 1945; the status of ICAO was, of course, established by treaty.


Photos ity
Air Caneld
Notinel Ariation Mriern National IIO Beard Constian Aviation, Terents Morthen Mebipppter Ud, Vescevrel Weiten Pacific Ailianei los, Vancown

The firsy no-reservations-required Airbul service ic Canada operates doily between Edmonton and Colgary.

Toranto International Airport leads is the honding of internationol aircraft movement but domettic and international flights.


By the end of 1946, TCA had expanded its domestic operations to Victoria, B.C., Blissville, N.B., and Fort William, Ont. Trans-border services were extended from London, Ont., to Chicago and Cleveland; Victoria to Seattle; and Saint John, N.B., and Yarmouth, N.S., to Boston.

The postwar advance in technology was so rapid and so radical that the Department of Transport, which was responsible for providing or ensuring the provision of all necessary ground support services-airports, aids to navigation, air traffic control, weather and communication systems and so on-was at times unable to keep abreast of them. Most Canadian cities had, with government assistance, built airports before the War that were good enough to become links in the transcontinental system. These were leased for training or other military purposes during the War and, as part of the process, most of them were enlarged and considerably improved. However, at the end of hostilities, airline operation had assumed such a high degree of sophistication that the airport proper merely provided a convenient base on which or around which the other services could be concentrated. Complex airport and approach lighting systems; customs, immigration and health facilities; airport and airway traffic control; electronic low-ceiling approach systems; meteorological and pilot-briefing centres and the nervous systems-the radio and electronic complexes necessary to keep this organism alive and alert-required such a high degree of standardization and entailed so much expense that municipal operation of these was out of the question. Some municipalities decided to retain control of the actual airport, including the terminal building, but the majority preferred to leave administration, and occasionally ownership, in Federal Government hands.

This posed, as it atill does, a financial problem of some magnitude. Most industrial states possess large populations and small land areas which can be served by one or two first-class airports. The reverse is true in Canada. History and geography have conspired to make Canada the world's great transit area or, if one is militaristically minded, the great buffer state of all time. The airline routes from northern Europe and Asia naturally flow over Canada. As one of the leaders in world aviation and as a signatory to the Chicago Convention, Canada must provide the facilities necessary to ensure safe flight over its vast territory. The challenge has therefore been accepted but entails the construction and maintenance of 10 major airports, with Whitehorse, N.W.T., at one flank and Gander, Nfld., at the other, concerning which no single community can be expected to accept more than a token responsibility; and there are a dozen-and-a-half more which, because of involvement in trans-border operations, merit some federal aid. The resources of the Department of Transport have therefore, been taxed to the limit in meeting these needs. Statistics show that, among the 'have' nations, of which Canada is one, air traffic, since 1945, has doubled approximately every five years. The tasks imposed on the ground-support services involved not only the increasing volume but the vastly increased sophistication needed to maintain that volume; increasing size, speed, ceiling and performance of aircraft called for new equipment, new techniques, even new trades or professions in maintaining ground services.

Postwar changes were swift and relentless. By the end of 1945 the first feet of aircraft operated by TCA was facing obsolescence and steps were being taken to replace the domestic fleet with the 21-passenger DC-3s. Orders had also been given for a fleet of modified 40-passenger DC-4s, renamed the North Star, for both domestic and overseas operations; meanwhile, the Canadian Government Trans-Atlantic Air Service continued in operation using six Lancasters.

Canadian Pacific Airlines never became reconciled to the single chosen-instrument concept for either domestic or international operations, and historical developments soon forced a change of Government policy. The pressure of events during the War had left, in the hands of CPA the operation of the Vancouver-Fort St. John and Edmonton-Fort St. John-Whitehorse service, which the CPA subsidiary, Yukon Southern Air Transport, had pioneered. During the last days of the War when all efforts were concentrated on crushing Japan, this had become an exceedingly busy and important line of communication
and, because CPA was organized and equipped to operate over it, the inevitable concomitant was to leave CPA to enjoy its well-earned laurels, exercising what is known in technical jargon as Grand Father rights. Thereafter, between second-thinking in policymaking circles in Ottawa and aggressive and enlightened planning on the part of CPA, the latter proceeded to divest itself of the essentially bush operations while concentrating on expansion of the several inter-urban services it possessed. Few of the services were lucrative but by operating them the company maintained both its training standards and its equipment at a level in keeping with that of a first-class airline operator.

A significant modification of Government policy in 1948 enlarged the chosen-instrument concept to cover the operations of CPA in the Pacific north and south and, in July 1949, operations were started to Auckland, New Zealand, and Sydney, Australia via San Francisco, Honolulu and Fiji. This was followed in September of that year by a service to Hong Kong and Tokyo by way of Alaska. Services were extended to Mexico City and Lima, Peru, in 1953. Two years later, a trans-polar route linking Sydney, Australia, to Amsterdam via Vancouver was inaugurated. That same year, CPA relinquished its domestic operations in Quebec and took over the service between Toronto and Mexico City previously operated by TCA. In May 1957, CPA entered the tranacontinental field by operating a service between Vancouver, Lisbon and Madrid via Montreal; this, in 1960, was extended to Rome and, in the south, services were extended to Santiago, Chile and Buenos Aires. During 1959 there was a complete change of Government policy and CPA was granted a daily transcontinental service between Vancouver and Montreal via Winnipeg and Toronto.

TCA began a service between Canada and the West Indies in 1948-first running from Toronto to Nassau and Port-of-Spain and later to Bermuda and Barbados, Trinidad and ultimately, in 1953, to Montego Bay, Jamaica. A service from London to Paris was started in 1951 and from London to Dusseldorf, Germany, in 1952. Brussels and Vienna and Zurich were added in 1958 and 1959, respectively. Thus by 1960, TCA services were extended to cover the principal cities of northern Europe. In December of that year the airline made its 1,000 th crossing of the Atlantic and was permitted to extend its service from Prestwick to London. It had now assumed full responsibility for what had been the Canadian Government Trans-Atlantic Air Service and this service was officially recognized as a commercial operation.

The general types of aircraft used by the two great companies followed a somewhat similar pattern. DC-3s or similar types with a capacity of about 25 seats and a cruising speed of 180 mph . were introduced around 1945 and the 40 -passenger North Star, with useful speed of about 270 mph . and a range of 3,500 miles, came into use in 1948. Constellations, Super-Constellations or Douglas DC-6Bs were introduced around 1954 but were soon out-classed by aircraft using a radically new power-plant-the jet-turbine engine. Vickers Viscounts or Bristol Britannias (propeller-driven jet turbine aircraft) were commissioned during 1956-58 but the most radical change in equipment occurred in 1960 when the DC-8 jet-turbines, with seating capacity for 120 passengers, a range of 4,000 miles and a speed of 560 mph ., came into service. One configuration of this aircraft will carry 50,000 lb. of freight and 69 passengers. By agreement, both companies are equipped with the same type of aircraft.

Air Canada (as Trans-Canada Air Lines was re-named in 1964) was the first international airline to operate an entire fleet of jet-powered aircraft. Canadian operators have led in this field and both companies have kept abreast of the best international operators in the safety, efficiency, speed and comfort of their services. These, by international agreement effected through the agency of the International Air Transport Association (IATA), are the only sectors in which competition is allowed. Fares on international services are set by international agreement and domestic fares come under the purview of the Air Transport Board.

Canada's position in air transportation is what would be expected of one of the world's wealthiest nations which is also possessed of one of the world's largest land masses. The two great airline systems shuttle across the settled southern belt making over 50 round trips daily during the peak season, in a matter of five to seven hours, between Vancouver and Montreal. Six large regional operators serve all those settled or partially settled parts of Canada outside of the territories served by Air Canada and CPA and these operations, combined with extensive charter, executive and private flying, place Canada in the world's second position in the use of aircraft.

Air Canada, which holds ninth place as an international carrier, serves most of the United States, the Caribbean area and Northern Europe including the British Isles, using sub-sonic jets, with a frequency varying between 25 return flights weekly to Britain to thrice weekly to Zurich and Vienna. CPA operates across the North Pacific from Vancouver to Tokyo and Hong Kong, and across the central Pacific to Australia and New Zealand by way of Honolulu. Mexico City, Lima, Peru, Santiago, Chile, and Buenos Aires, Argentina, are served on a weekly basis. In effect, Canada, as one of the world's great trading nations, has established the most rapid transportation connections available with the Weatern Hemisphere, Western Europe and the Eastern Orient.

In international flying alone, Canada stands in fifth place in the world. For all types of fying, domestic and international, Canada's position is third and, as has been mentioned, in domestic flying alone, Canada is in second position.

## Section 1.-Civil Aviation Administration and Policy

Administration.-Civil aviation in Canada is under the jurisdiction of the Federal Government and is administered under the authority of the Aeronautics Act, 1919 and amendments thereto. The Aeronautics Act is in three parts. Broadly speaking, Part I deals with the technical side of civil aviation comprising matters of registration of aircraft, licensing of airmen, the establishment and maintenance of airports and facilities for air navigation, air traffic control, accident investigation and the safe operation of aircraft. This Part of the Act is administered by the Director of Civil Aviation under the supervision of the Assistant Deputy Minister, Air Services, Department of Transport. Part II of the Act deals with the social and economic aspects of commercial air services and assigns to the Air Transport Board certain regulatory functions of commercial air services (see p. 787). Part III deals with matters of government internal administration in connection with the Act.

International Air Agreements.-The position of Canada in the field of aviation as well as its geographical location makes co-operation with other nations of the world engaged in international civil aviation imperative. Canada therefore took a major part in the original discussions that led to the establishment of the International Civil Aviation Organization (ICAO) which has headquarters at Montreal, Que. A special article on The International Civil Aviation Organization and Canada's Participation Therein appears in the 1952-53 Year Book, pp. 820-827 At present, Canada has air agreements with 21 other countries.

Federal Civil Aviation Policy.-The intent of Federal Government concern in civil aviation is to provide an efficient and stable service for the Canadian public and the best possible economic framework for the major and regional carriers. In formulating its aviation policy in 1964, three principles were accepted by the Government as basic. The first related to the international field and stated that air services provided by Canadian airlines should serve the Canadian interest as a whole; that these services should not be competitive or conflicting but should represent a single integrated plan which could be achieved by amalgamation, by partnership or by a clear division of fields of operations. The two major airlines agreed that the most effective way to carry out this policy would be by a clear division of their fields of operations so that outside Canada neither airline
would serve any point served by the other. As a result, it was decided that Canadian Pacific Airlines Limited would serve the whole Pacific area, the whole Continent of Asia, Australia and New Zealand, Southern and Southeastern Europe and Latin America, and that Air Canada would serve Britain, Western, Northern and Eastern Europe, and the Caribbean. The only exception to this clear-cut division is that CPA would continue to serve the Netherlands. This division accounts for the whole of the world except Africa and the United States; decisions concerning the former depend on the contemplation of service to that area and those concerning the latter on the completion of new bilateral agreements. Co-operation is maintained between the two carriers in sales and agency relationships, each carrier representing the other outside its own area, so that passengers are encouraged to travel to their destinations by Canadian airlines. Other measures of co-operation, including joint advice to the Government on air negotiations and joint servicing and support arrangements, are maintained.

The second principle concerned the domestic mainline services and stated that, although competition was not to be rejected, development of competition should not compromise or seriously injure the economic viability of Air Canada's domestic operations which represent the essential framework of its network of domestic services, and in the event that competition continues, opportunity should be ensured for growth to both lines above this basic minimum. In 1965 a special aviation consultant was appointed to advise whether the growth of domestic mainline service would permit some further degree of competition and to recommend the procedure for working out such extensions of service. The report of the consultant is now (December 1966) being examined.

The third principle concerned the role of regional air carriers providing scheduled service and their relationship with the mainline carriers. Recommendations were prepared by the two major airlines and the larger regional carriers which resulted in a "Statement of Principles for Regional Air Carriers" tabled in the House of Commons on Oct. 20, 1966, by the Minister of Transport. These principles are summarized as follows:-
(1) Regional carriers will provide regular route operations into the North and will operate local or regional routes to supplement the domestic mainline operations of Air Canada and CPA; they will be limited to a regional role.
(2) Greater scope will be allowed regional carriers in the development of routes and services by the following means: (a) where appropriate, limited competition on mainline route segments of Air Canada or CPA may be permitted to regional carriers if this is consistent with their local route development; (b) in a few cases, secondary routes at present operated by Air Canada and CPA may become eligible for transfer to regional carriers; and (c) a larger role will be allotted to regional carriers in connection with the development of domestic and international charter services, inclusive tours and new types of services.
(3) Greater co-operation between the mainline carriers and the regional carriers will be developed in a variety of fields, ranging from technical and servicing arrangements to joint fare arrangements.
(4) A limited policy of temporary subsidies for regional routes will be introduced, to be based upon a "use it or lose it" formula.
(5) Firmer control will be exercised over the financial structure of regional carriers in connection with new licensing arrangements.
(6) Regional carriers will be assisted with the acquisition of aircraft by development of a scheme for consultation between government and the carriers regarding plans for new aircraft, and by a special investigation designed to explore the possibility of developing a joint approach to this problem on the part of the carriers.

Thus, in the international field, the joint approach to the provision of world-wide service by the two major Canadian carriers is intended to strengthen their position in a very competitive field and provide a better over-all service to the travelling public. In the domestic field, a degree of competition remains to provide the public with the advantages that can result from a competitive atmosphere but avoids excesses of competition, which could be ruinous to the operators and unsatisfactory to the public.

A new National Transportation Act defining and implementing the national transportation policy, including the civil aviation policy, was passed by the Federal Parliament on Jan. 27, 1967 (SC 1967, c. 69).

## Section 2.-Current Air Services

Two major airlines, Air Canada and Canadian Pacifie Airlines Limited, form the nucleus of Canada's freight and passenger air service. Current operations of these airlines are discussed briefly below, followed by short outlines of the services provided by independent airlines and a list of Commonwealth and foreign air carriers licensed to operate services into Canada.

Broadly, air transport services in Canada may be grouped into two classes-Scheduled Services and Non-scheduled Services. Services in the first group are operated by air carriers that offer public transportation of persons, mails and/or goods by aircraft, serving designated points in accordance with a service schedule and at a toll per unit. The second group includes the following:-
(1) Regular Specific Point Air Services-operated by air carriers that offier public transportation of persons, mails and/or goods by aircrait serving designated points on a route pattern and with some degree of regularity, at a toll per unit.
(2) Irregular Specific Point Air Services-operated by air carriers that offer public transportation oi persons, mails and/or goods by aircraft from a designated base, serving a defined area or a specific point or points, at a toll per unit.
(3) Charter Air Services-operated by air carriers that offer public transportation of persons and/or goods by aircraft from a designated base, at a toll per mile or per hour for the chatter of the entire aircraft, or at such other tolls as may be permitted by the Air Transport Board.
(4) Contract Air Services-operated by air carriers that do not offer public transportation but who transport persons and/or goods solely in accordance with one or more specific contracts.
(5) Flying Clubs-operated by air carriers incorporated as non-profit organizations for the purpose of furnishing fying training and recreational flying to club members.
(6) Specialty Services-operated by air carriers for purposes not provided for by any other class, such as fying training, recreational flying, aerial photography and survey, aerial pest control, aerial advertising, aerial patrol and inspection, etc.

Air Canada.-Continued development in all phases of Air Canada's operations made 1965 an exceptional year in terms of both traffic and revenues. The airline carried 4,753,395 passengers on scheduled and charter services, an increase of 13 p.e. over 1964 . The volume of business exceeded expectations, the airline sharing in a general increase throughout the industry, with virtually all major air carriers reporting notable traffic growth. Total scheduled seat miles offered were $5,458,000,000$, up 18 p.e., and revenue passenger-miles flown exceeded $3,542,000,000$, an increase of 21 p.c. The passenger load factor rose from 63 p.e. in 1964 to 65 p.c. in 1965.

North American passenger-miles flown, which represented almost three quarters of Air Canada's scheduled passenger traffic, increased 17 p.c. as the airline introduced additional services on most major domestic routes; $2,591,000,000$ domestic passenger miles were flown in 1965 compared with $2,213,000,000$ in 1964 . There was a 33 -p.c. increase in scheduled transatlantic passenger traffic, following a $23-$ p.c. increase in 1964 which resulted from new low fares introduced in April of that year. These same low fares, coupled with greater flight frequencies and additional non-stop services, accounted in large measure for the substantial advancement in 1965. On the routes to Florida, Bermuda, the Bahamas and the Caribbean, passenger-miles flown exceeded $307,000,000$, up 36 p.c. over 1964.

For the fourth successive year there was a marked expansion in commodity traffic in 1965, air freight increasing 36 p.c. to $56,000,000$ ton-miles and surpassing mail as a source of revenue. Air express rose 27 p.c. to $5,500,000$ ton-miles. This exceptional growth was the result of added jet freighter capabilities as well as the rapidly growing awareness by the business community of the advantages of air transport in marketing plans.

At the end of 1965, Air Canada was operating over 42,343 unduplicated route miles, linking Canada, the United States, the British Isles, Continental Europe and the Caribbean.

Its fleet consisted of 16 Douglas DC-8 jetliners and 23 Vickers Vanguard and 39 Vickers Viscount turbo-prop aircraft. The company became committed in 1965 to the purchase of 16 new jets to be delivered in 1967 These, together with eight others specified in 1963 and 1964 for delivery in 1966, will increase Air Canada's fleet of jets to 40 by June 1967.
1.-Operating Statistics of Air Canada, 1856-65

| Year | Traffic |  |  |  | Operating Revenue |  |  | Opersting Expenditure | Operating Surplas |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Revenue Paseenger' |  | Revente Com. modity ${ }^{2}$ | Mail | Paasenger | Freicht sad Mail | Total ${ }^{\text {a }}$ |  |  |
|  | No. | '090 passengermiles | $\begin{aligned} & \text { '000 } \\ & \text { ton- } \\ & \text { milea } \end{aligned}$ | $\begin{aligned} & \text { '000 } \\ & \text { ton- } \\ & \text { miles } \end{aligned}$ | \$000 | \$ ${ }^{\prime} 000$ | \$'000 | \% ${ }^{\prime} 000$ | \$ 000 |
| 1956. | 2.072 .912 | 1.191,784 | 14.476 | 8,613 | 74.479 | 15,639 | 91,305 | 89,197 | +2,109 |
| 1957. | 2,302.713 | 1,385,777 | 15.478 | 9.855 | 86,524 | 16,055 | 104, 996 | 96.680 | +8.315 |
| 1958. | 2,-85,523 | 1,625.689 | 15,395 | 10,386 | 101,553 | 17,407 | 120,655 | 108, 130 | +12,425 |
| 1959. | 3,209,197 | 1,828,902 | 17,753 | 10,905 | 114,339 | 18,293 | 134,679 | 120, 120 | +14.559 |
| 1960. | 3,440,303 | 2,050,600 | 20,868 | 11,593 | 127.596 | 19,307 | 148,987 | 134,263 | +14,724 |
| 1961 | 3,712.068 | 2,481,122 | 24,091 | 11,934 | 143.301 | 19.466 | 185,436 | 143.370 | +22,066 |
| 1982. | 3,865.408 | 2+659,578 | 28,827 | 12,862 | 158.792 | 21914 | 183,473 | 152, 821 | +30.652 |
| 1983. | 3,966,547 | 2,887,239 | 35,781 | 13,859 | 167.653 | 24,088 | 199,390 | 161.818 | +37,574 |
| 1964. | 4,189,349 | 3,150,956 | 45.589 | 15.731 | 177.091 | 27.684 | 213,909 | 178, 752 | +38,157 |
| 1965. | 4,753,395 | 3.715.635 | 61.662 | 17.287 | 209,926 | 31,899 | 250,126 | 205. 138 | +44,988 |

I Includes non-sobeduled service.
2 Includes excesa bagesage and expresa.
${ }^{1}$ Includes other revenue.
Canadian Pacific Airlines Limited.-CPA in 1965 operated a 52,000 -mile route pattern linking five continents and major cities of Canada. This included 7,000 miles of Canadian routes, 2,450 miles of which was transcontinental service. In 1965, the airline carried 630,816 passengers, the largest number since the company's formation in 1942. Revenue passenger-miles showed a substantial gain to $1,144,936,000$, passing the billion-mile-mark for the first time.

CPA's international routes, 45,000 miles in extent, operate from Vancouver to Honolulu, Fiji, New Zealand and Australia on the South Pacific service; to Japan and Hong Kong via the Great Circle Route across the North Pacific; from Vancouver via Calgary and Edmonton to Amsterdam on the Polar Route, and across the Atlantic from Toronto and Montreal to Holland, the Azores, Portugal, Spain and Italy. A South American network serves Mexico, Peru, Chile and Argentina from Montreal, Toronto and Windsor in Eastern Canada and from Vancouver and Calgary in the West. Within Canada a transcontinental service links Vancouver, Winnipeg, Toronto and Montreal and a network of north-south routes serves British Columbia, the Yukon and western Alberta.

CPA's fleet consists of 17 aircraft-six Douglas DC-8 jets, eight Douglas DC-6Bs and three Douglas DC-3s. Four DC-8 series 63, the so-called 'stretched jets', are on order for delivery during 1967 These aircraft will carry 205 passengers in CPA's seat plan. The interational and transcontinental routes are served by DC-8 jets, with the propeller types flying on the shorter domestic lines.

Independent Airlines.-In addition to the two major Canadian air carriers-Air Canada and Canadian Pacific Airlines Limited-there are four domestic air carriers licensed to operate scheduled commercial air services in Canada, namely, Eastern Provincial Airways (1963) Ltd., Gander, Nfld.; Quebecair, Rimouski, Que.; TransAir Limited, Winnipeg, Man.; and Pacific Western Airlines Ltd., Vancouver, B.C.

Licensed Canadian air carriers operating in Canada as at Mar. 31, 1966 held valid operating certificates covering 38 scheduled, 168 flying training, and 1,595 other nonscheduled and specialty services. These non-scheduled services, in addition to providing effective access to sections of Canada that are inaccessible by other means of transportation,
act as feeder lines to the scheduled airlines. They also include such specialty services as recreational fying, aerial photography and surveying, aerial pest control, aerial advertising, aerial patrol and inspection.

Eastern Provincial Airways (1963) Ltd.-This company operates throughout the Atlantic Provinces, eastern Quebec and Labrador. It serves Charlottetown and Summerside in Prince Edward Island; Moncton and Dalhousie in New Brunswiek; New Glasgow and Halifax in Nova Scotia; Deer Lake-Corner Brook, Gander and St. John's in Newfoundiand; Goose Bay and Saglek in Labrador; and Sept Iles and the Magdalen Islands in Quebec.

The Airways fleet consists of three Handley-Page Dart Heralds, one DC-4, three DC-3s, two PBY Cansos, five DH Beavers and five DH Otters. The Company carries on an extensive air freight service throughout the above areas and conducts many specialty services such as mineral exploration, the transporting of hunting and fishing parties, ambulance service and forestry, seal and ice patrol services.

Quebecair.-Quebecair, with head office at Rimouski, offers scheduled services in Quebec and Labrador. The company dates from 1946 and was founded under the name "Le Syndicat d'Aviation de Rimouski" In 1947 the name was changed to Rimouski Airlines and the company inaugurated an air transport service between the shores of the Gulf of St. Lawrence, linking Matane, Mont Joli, Rimouski, Forestville, Baie Comeau and Sept Iles. Until 1953 service was limited to towns and small centres located between Rimouski and Gaspe on the south shore of the St. Lawrence River and between Forestville and Sept Iles on the north shore. In 1953 with the amalgamation of Gulf Aviation the name Quebecair was adopted. With the expansion of mining and industrial activities, Quebecair extended its network to Quebec City and Schefferville in 1955, to Montreal in 1957, to Gagnon and Rivière du Loup in 1959, to Wabush in 1960, to Manicouagan and Saguenay in 1961 and to Murray Bay in 1962.

During 1965, Quebecair acquired Matane Air Services Ltd., Northern Winge Ltd., Northern Wings Helicopters Ltd., and merged its scheduled services with those of its two subsidiaries Northern Wings Ltd. and Matane Air Services Ltd. Quebecair is primarily responsible for the operation of scheduled service by large aircraft; the subsidiaries are charged with handling flights by light aircraft, charters and contract services.

Scheduled services over 4,000 unduplicated miles are operated, and some 30 localities situated in nine economic regions of Quebec and Labrador are served on a daily basis. Points linked are: Montreal, Quebec, Murray Bay (Charlevoix), Rivière du Loup, Rimouski, Mont Joli, Matane, Saguenay, Forestville, Baie Comeau (Hauterive), Manicouagan, Sept Iles, Gagnon, Wabush (Labrador City), Schefferville, Rivière au Tonnerre, Mingan, Havre St. Pierre, Port Menier, Gaspe, Baie Johan Beetz, Aguanish, Natashquan, Kégaska, Gethsémanie, Harrington Harbour, Tête-à-la-Baleine, La Tabatière, St. Augustin, Old Fort Bay, St. Paul and Blane Sablon.

At the end of 1965, the combined fleet of Quebecair and subsidiaries totalled 32 aircraft: four turbo-prop Fairchild F-27s, nine DC-3s, two Canso PBYs, one Curtiss C-46, three Lockheed 10s, one Beechcraft D-18, two Otter, four Beaver, one Cessna 185, three Bell Helicopters 47-G-2 and two Bell Helicopters 47-G-4.

TransAir Limited.-TransAir Limited, with headquarters at the Winnipeg International Airport, operates scheduled, non-scheduled and sportsmen's flights in Manitoba, Saskatchewan, Ontario and the Northwest Territories and charter flights throughout Canada and from Canada to points around the world. The company's scheduled mainline services are operated in three areas: (1) The Prairies-from Winnipeg to Brandon-Regina-Saskatoon-Prince Albert and return and from Winnipeg to Dauphin-Yorkton and return; (2) Manitoba and Central-from Winnipeg to The Pas-Thompson-Churchill and return, from Winnipeg to The Pas-Flin Flon-Lynn Lake and return, and from Winnipeg to Red Lake and return; and (3) Arctic-from Churchill to Rankin Inlet-Baker Lake and return and from Churchill to Rankin Inlet-Coral Harbour and return.

TransAir has 23 aircraft, 16 of which are multi-engine including DC-7C, DC-6, Viscount, DC-4, DC-3, PBY 5A Canso and Beecheraft, stationed at Winnipeg and at the companv's major base at Churchill, Man., together with single-engine float and skiequipped Beaver and Norseman aircraft positioned at Churchill and Norway House, Man., and at Sioux Lookout and Pickle Lake, Ont. Scheduled and charter fights also originate from these bases to many points adjacent to them. The DC-7C is used primarily on international and other long-range charter flights. Since 1961 TransAir has operated from Winnipeg and Churchill, under contract with the United States Air Force, the vertical re-supply flights to the four main sites in the Canadian sector of the Distant Early Warning Line in the extreme Arctic and is now regarded as the largest contract cargo carrier in Canada.

Some of TransAir's main 1965 statistics are: number of employees, 353 ; number of pilots, 56; unduplicated route miles, 8,074; passengers carried, 85,022; miles flown, $3,521,966$; and total revenue ton-miles, 4,680,170.

Pacific Western Airlines Ltd.-Pacific Western Airlines Ltd., with head office at Vancouver International Airport, operates over more than 7,700 route miles; its services include scheduled mainline, local regular unit toll and charter fights in Saskatchewan, Alberta, Yukon Territory, the Northwest Territories including the Arctic islands, and British Columbia. Regularly scheduled mainline services are operated northbound from Edmonton to Dawson Creek, Peace River, McMurray, Dranium City, Fort Smith, Cambridge Bay, Fort Resolution, Hay River, Yellowknife, Fort Simpson, Wrigley, Norman Wells and Inuvik. The first no-reservations-required AirBus service in Canada operates daily between Edmonton and Calgary. The company also operates international charter services.

On the Pacific Cosst, mainline services are operated from Vancouver to Comox, Powell River, Campbell River, Hudson Hope and Port Hardy and local services are operated between Prince Rupert, Stewart, Ford's Cove, Anyox, Maple Bay and Alice Arm in northern British Columbia. In addition, local charter services are operated out of Vancouver, Nelson, Kamloops, Prince George and Prince Rupert and large aircraft charter services are operated from major centres.

Aircraft operated by Pacific Western number 36 and range from DC-7Cs, DC-6Bs, DC-6s, DC-4s, Super 46s and DC-3s on mainline services, to Otters, Beavers, Grumman Goose and Cessnas on charter and freight flights. Revenue passengers carried in 1965 totalled 280,426 , freight and express carried amounted to $27,087,600 \mathrm{lb}$. and miles flown numbered $6,490,931$.

Commonwealth and Foreign Scheduled Commercial Air Services.-At the end of 1966, there were 23 Commonwealth and foreign air carriers holding valid Canadian operating certificates and licences issued for the following international scheduled commercial air services into Canada:-

Aeronaves de Mexico, S.A., operating between Montreal and Toronto (Canada) and Mexico City (Mexico).
Air France (Compagnie Nationale Air France), operating between Paris and other points in Metropolitan France, Montreal (Canada) and Chicaso (U.S.A.) and beyond.
Alitalia (Italian International Airlines), operating between Rome and Milan (Italy), Montreal (Canada) and Chicago (U.S.A.).
American Airlines, Inc., operating between Toronto (Canada) and New York/Newark (U.S.A.).
British Overseas Airways Corp., operating between London and Manchester (England), Prestwick (Scotland), Montreal and Toronto (Canada) and Boston, New York and Chicago (U.S.A.), and between London (England), Prestwick (Scotland), Gander (Canada), Bermuda, Nassau, Montego Bay, Barbados and Trinidad.
Deutsche Lufthansa Alkiengesellschaft (Lufthansa German Airlines), operating between Hamburg (Germany) and other points abroad, Montreal (Canada) and Chicago (U.S.A.).
Eastern Air Lines, Inc., operating between the terminals Ottawa and Montreal (Canada) and New York (U.S.A.), and between the terminals Ottawa and Montreal (Canada) and Washington (U.S.A.).
Irish International Airlines (Aerlinte Eireann Teoranta), operating between Shannou (Ireland) and Montreal (Canada).

KLM Royal Dutch Airlines, operating between Montreal (Canada) and Amsterdam (Netherlands).
Mohawk Airlines, Inc., operating between Toronto (Canada) and Buffalo (U.S.A.).
North Central Airlines, Inc., operating between Port Arthur/Fort William (Canada) and Duluth/Superior (U.S.A.).
Northeast Airlines, Inc., operating between Montreal (Canada) and Boston (U.S.A.) via Concord, Montpelier-Barre, Burlington and White River Junction (U.S.A.).
Northwest Airlines, Inc., operating between Winnipeg (Canada) and Fargo (U.S.A.) and between Minneapolis/St. Paul (U.S.A.), Winnipeg and Edmonton (Canada), Anchorage (Alaska, U.S.A.) and beyond.

Pan American World Airways Inc., operating between New York and Boston (U.S.A.), Gander (Canada), Shannon (Ireland) and London (England).
Qantas Empire Airways Led., operating between Sydney (Australia), San Francisco (U.S.A.) and Vancouver (Canada).
Sabena Belgian World Airlines, operating between Brussels (Belgium), Manchester (England), Shannon (Ireland), Montreal (Canada) and New York (U.S.A.).
Scandinavian Airlines System, operating between Stockholm (Sweden), Oslo (Norway), Copenhagen (Denmark), Hamburg (Germany) and Montreal (Canada), and New York and Chicago (U.S.A.).
Seaboard and Western Airlines, Inc., operating between points in the United States, Gander (Canada) and points in Europe.
Swiss Air Transport Company Lid., (Swissair), operating between Zurich and Geneva (Switzerland), Montreal (Canada) and Chicago (U.S.A.).
United Air Lines, Inc., operating between Vancouver (Canada) and Seattle (U.S.A.).
West Coast Airlines, Ine, operating between Calgary (Canada) and Spokane (U.S.A.).
Western Air Lines, Inc., operating between Calgary and Edmonton (Canada) and Great Falls (U.S.A.).

Wien-Alaska Airlines Inc., operating between Whitehorse, Y.T. (Canada) and Fairbanks and Juneau (Alaska, U.S.A.).

Flying Schools and Clubs.-At the end of 1965, 86 commercial flying schools were registered as members of the Air Transport Association of Canada. During the year, these schools instructed and graduated 1,756 students as private pilots and 507 students as commercial pilots.

Membership in 33 flying clubs connected with the Royal Canadian Flying Clubs Association numbered 8,806 at the end of 1965 . During the year these clubs instructed and graduated 1,297 students as private pilots and 140 students as commercial pilots.

Weather Services.*-Weather services are provided by the Meteorological Branch of the Department of Transport to meet the requirements of the general public and all basic economic endeavours such as agriculture, industry, forestry, shipping and fishing. Meteorological service is provided to national and international aviation. The military meteorological requirements in Canada and overseas are met by special co-operative arrangements with the Department of National Defence. The observing and forecasting of ice conditions in navigable waters, both inland and coastal, have expanded rapidly in recent years.

Canadian Weather Offices are linked by 59,700 miles of teletype and radio-teletype circuits, and a national facsimile system 13,700 miles long is used for the distribution of meteorological information in chart form. As of Jan. 1, 1966, the Branch maintained 274 surface synoptic and hourly weather reporting stations, at 34 of which upper air observations are taken, and 2,039 climatological stations, making a total of 2,313 weather reporting stations. One Ocean Weather Station in the Pacific, 1,000 miles west of Vancouver, is maintained under International Agreement.

Ground Facilities.-Aircraft landing areas in Canada are listed in Table 2 and classified by administrative agency as licensed or unlicensed land facilities or seaplane bases, and military airfields. Licensed aerodromes are those that are inspected at regular intervals and meet specific standards, whereas unlicensed aerodromes may not meet the same standards. In addition to aerodromes, a network of radio aids to navigation is maintained to facilitate en route navigation and safe landings under instrument conditions.

[^271]On Apr．1，1966，the Department of Transport operated 72 low frequency radio ranges and 46 VHF omni－directional rangea．Instrument Landing Syatems in operation totalled 43 and there were 218 non－directional beacons in operation．All of the operating facilities are regularly fight－checked and calibrated by civil aviation ingpectors．（See also item on Aeronautical Navigation，pp．878－879．）

## 2．－Aircraft Landing Areas classifled by Type of Faclity and Operator，by Province， as at Apr．1， 1986

| Type of Facility and Operator | Nfld． | P．E．I． | N．S． | N．B． | Que． | Ont． | Man． | Sark． | Alta． | B．C． | N．W．T． | Y．T． | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No． | No． | No． | No． | No． | No． | No． | No． | No． | No． | No． | No． | No． |
| Licensed Airports（Land）－ Department of Transport．．．．． |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Department of Transport．．．．．． | 2 | 1 | 3 | 2 | 8 | 18 | 4 | 4 | 5 | 22 | 13 | 4 | 86 |
| Municipal．．．．．．．．．．．．．．．．．．．．． | 3 | － | 1 | 5 | 24 | 19 | 7 | 16 | 22 | 19 | － | 3 | 119 |
| Private．．．．．．．．．．．．．．．．．．．．．．． | 2 | 1 | 1 | 3 | 25 | 38 | 5 | 9 | 16 | 2 | 1 |  | 103 |
| Unlicensed Aerodromes－ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Department of Transport． | 2 | － | － | － | 2 | 4 | 1 | 1 | － | 9 | 5 | 4 | 28 |
| Municipal．．．．．．．．．．．．．．．．． | 3 | － | 2 | 1 | 7 | 7 | 3 | 28 | 48 | 16 | 2 | 4 | 121 |
| Private．．．．．．．．．．．．．．．．．．．．．．．． | 3 | 1 | 2 | 11 | 22 | 22 | 35 | 110 | 40 | 74 | 13 | 1 | 334 |
| Abandoned or unknown．．．．．．．．． | 5 | 1 | － | － | 12 | 8 | 1 | 3 | － | 24 | － |  | 84 |
| Licensed Seaplane Bases－ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Department of Transport． | － | $\cdots$ | － | － | － | － | － | － | － | 3 | 1 | － | 4 |
| Municipal．．．．．．．．．．．．．．．．．．．．． | － | － | 1 | － | 1 | 13 | 1 | － | 1 | 11 | $\frac{1}{28}$ | 2 | 30 |
| Private．．．．． | 6 | － | 3 | － | 62 | 102 | 44 | 25 | 3 | 52 | 28 | 4 | 329 |
| Unlicensed Seaplane Bases－ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Department of Transport．．．．．． | － | － | － | $\cdots$ | 1 | $\overline{15}$ | 3 | 2 | － | 16 | － | 2 | 17 |
| Municipal．．．．．．．．．．．．．．．．． | － | － | 二 | － | － | 15 | 3 | 2 | 2 | 8 |  | 2 | 32 |
| Private．．．．．．．．．．．．．．．．．．．．．． | ${ }^{9}$ | T | － | ${ }_{2}^{2}$ | 21 | 12 | 7 | ${ }_{6}^{6}$ | 4 | 21 | 7 | － | 88 |
| Abandoned or unknown．．．．．．．． | 14 | 1 | 9 | 6 | 19 | 13 | 12 | 9 | 8 | 15 | 18 | 4 | 128 |
| Military Air6elda－ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| RCAF．．．．．．．．．．．．．．．．．．．．．．．． | 2 | 1 | 1 | 2 | 3 | 10 | 4 | 4 | 3 | 3 | 4 | － | 37 |
| Army | 二 | 二 | 3 | 1 | － | 1 | 1 | $\cdots$ | 2 | 二 | － | 二 | 5 |
| U．S．Navy | T | － | 3 | － | 二 | 二 | 二 | － | － | 二 | $\bar{T}$ | 二 | 3 |
| U．S．Ar Force．． | 3 | － | － | $\cdots$ | － | － | － | － | 二 | 二 | 17 | 2 | 22 |
| Totals，Land Bases．．．．．．．．． | 24 | 4 | 10 | 22 | 105 | 125 | 57 | 171 | 131 | 176 | 35 | 17 | 873 |
| Totals，Seaplane Bases．．．． | 29 | 1 | 13 | 8 | 104 | 155 | 67 | 42 | 18 | 126 | 54 | 12 | 689 |
| Totals，Mrlitary Airfields．．． | 6 | 1 | 4 | 3 | 3 | 11 | 5 | 4 | 5 | 3 | 22 | 2 | 69 |
| Grand Totals．．．．．．．． | 55 | 6 | 27 | 33 | 212 | 291 | 129 | 21\％ | 154 | 305 | 111 | 31 | 1，571 |

Air Traffic Control．－The primary functions of the Air Traffic Control Division of the Department of Transport are to expedite and maintain an orderly flow of air traffic and to prevent collision between aircraft operating within controlled airspace and between aircraft and obstructions on the movement area of controlled airports．This is accom－ plished through airport control，terminal control and area control services．These and other allied services are described below．

Airport Control Service provides control service to flights operating in the vicinity of major civil airports where the volume and type of aircraft operations，weather conditions and other factors indicate its need in the interest of flight safety．The service also includes the control of all traffic on the manoeuvring area of the airport．Control is effected by means of direct radiotelephone communication or visual signals．Airport control towers are located at： Whitehorse，Y．T．；Fort St．John，Prince George，Victoria（international），Port Hardy Abbotsford and Vaucouver，B．C．；Lethbridge，Calgary，Edmonton（industrial）and Edmonton（international），Alta．；Saskatoon and Regina，Sask．：Winnipeg（international）， Man．；Lakehead，Windsor，London，Toronto Island，Toronto（international），Ottawa （international）and North Bay，Ont．；Montreal（international），Cartierville，Quebec，Baie Comeau and Sept Iles，Que．；Moncton，Fredericton and Saint John，N．B．；Halifax（inter－ national）and Sydney，N．S．；and Gander（international）and St．John＇s，Nfld．

Area Control Service provides control service to en route flights operating within controlled airspace during weather conditions that prevent a pilot from seeing other aircraft or obstructions and necessitate his reliance on instruments to conduct the flight. Area control centres are located at Vancouver, B.C., Edmonton, Alta., Winnipeg, Man., Toronto, Ont., Montreal, Que., Moncton, N.B., Goose Bay and Gander, NAd. Each centre is connected with control towers, terminal control units, communications stations and operation offices within its area by means of an extensive system of local and long-line interphone or radio circuits, and through radio communications facilities available at these stations to all aircraft requiring area control service. Area control centres are also capable of communieating directly with most pilots fying within their control areas. Each area control centre is similarly connected with adjacent centres, including centres in the United States, for the purpose of co-ordinating control of aircraft operating through more than one control area. This communications system permits each centre to maintain a continuous detailed record of all aircraft operating in accordance with the Instrument Flight Rules (IF R) and a general record of aircraft operating in accordance with the Visual Flight Rules within its control area. In addition to providing area control service to aircraft operating within controlled airspace over Newioundland, the Gander Control Centre provides control service within the airspace over approsimately one half of the North Atlantic Ocean. The Vancouver Area Control Centre also provides control service over the Pacific Ocean within the Vancouver Oceanic Control Area.
Terminal Control Service consists of the provision of separation to aircraft operating in accordance with IFR in the vicinity of all controlled airports. This service is normally provided by area control centres but separate terminal control units have been established at Calgary, Alta.; Saskatoon and Regina, Sask.; Lakehead, North Bay and Ottawa, Ont.; Quebec, Que.; and Haliiax, N.S.
Northern Area Control Service, inaugurated Sept. 26, 1963, is provided by the Edmonton, Winnipeg and Goose area control centres for aircrait flying above 23,000 feet, and is available throughout more than $3,000,000 \mathrm{sq}$. miles of Northern Canada.
Radar Control Service is provided extensively in the control of IFR traffic, both in terminal areas and while en route. Terminsl service is provided at Vancouver, B.C.; Calgary and Edmonton, Alta.; Regina and Saskatoon, Sask.; Winuipeg, Man.; Lakehead, Toronto, North Bay and Ottawa, Ont.; Montreal and Quebec, Que.; Moneton, N.B.; Halifax, N.S.; and Gander, Nfld. En route service is provided by area control centres and by one radar unit located at Kenora, Ont. Ground Control Approach Service is provided at Gander, Nfld. and Precision Approach Radar Service is provided at St. John's, Nif.; Halifax, N.S.; Montreal, Que.; Toronto, Ont.; Winnipeg, Man.; and Vancouver, B.C.

Flight Information Service is provided by all air traffic control units. but particularly by all area control centres. It consists of advice and information useful for the safe and efficient conduct of flight, including weather reports and forecasts, field condition reports, data concerning aids to navigation, traffic information, refueling and transportation facilities, and other data of assistance to the pilot in planning or conducting a flight.
Alerting Service ensures that appropriate organizations are notified of aircraft that may be in need of search and rescue aid. This entails the maintenance and constant supervision of a continuous record of active flights to ensure that failure of an aircraft to arrive at the planned destination notified to air traffic control is detected immediately. The service is available to any pilot who files either a flight plan or flight notification with air traffic control.
Customs Notification Service facilitates the routine notification of the appropriate customs agency by pilots who plan to cross the Canada-United States boundary at certain designated customs airports. This is achieved through the prompt notification by air traffic control, at a pilot's request, of the customs officer at the destination airport of the intended arrival and of the need for customs clearance.
Airspace Reservation Service provides reserved airspace for specified air operations within controlled airspace and information to other pilots concerning these reservations and military activity areas in controlled and uncontrolled airspace. The Airspace Reservation Co-ordination Office, located at Ottawa, is responsible for co-ordinating all airspace reservations in Canada and in the Gander and Vancouver Oceanic Control Areas.
Aircrafl Movement Information Service is provided by area control centres to assist the Department of National Defence in establishing the identification of all aircraft operating within specified areas.
Airport Activity.-During 1965, Canada's major civil airports were 18 p.c. busier than in 1964. The 33 Department of Transport tower-controlled airports recorded 2,688,239 aircraft movements (landings, take-offs and simulated approaches) compared with $2,288,504$ recorded by the same airports in 1964.

Itinerant movements (excluding purely local traffic) accounted for over 40 p.c. of the total traffic and for the second consecutive year Montreal International Airport ranked first in this category. The five leaders were: Montreal International, 107,255; Toronto International, 99,958; Vancouver International, 84,879; Winnipeg International, 74,787;
and Cartierville, 73,170 . From 1961 to 1965 itinerant movements increased more than 23 p.c. from 899,265 to $1,113,507$, most of the increase occurring in 1964 and 1965.

Montreal reported the greatest number of scheduled flights in 1965 with 62,540 movements. Toronto was a close second with 62,263 , followed by Vancouver with 26,110 , Winnipeg with 19,234 and Calgary with 16,222 . Toronto led in international flights with 33,888 movements, of which 30,856 were to and from the United States. However, Montreal, which had 30,978 international movements, maintained a commanding lead in traffic between Canada and countries other than the United States with 7,840 movements. Gander and Toronto followed with 3,178 and 3,032 movements, respectively. Local movements, which had been declining each year, showed an impressive increase in 1965 to $1,482,740$, largely due to increased flying training.

For the fourth consecutive year, Cartierville was the busiest airport in total traffic, having recorded 295,404 movements including local traffic and simulated approaches (instrument practice runs without touching the ground). Montreal International was second with 211,115 movements, followed by Toronto Island with 210,662, Winnipeg with 198,317 and Ottawa with 167,784.

## Section 3.-Givil Aviation Operation Statistics

Table 3 provides a picture of commercial civil aviation in Canada for the years 1962-65. It shows data on miles and hours flown, traffic carried, fuel and oil consumed, employees, salaries and operating revenues and expenses, by type of service, for Canadian air carriers followed by summary statistics for all Canadian carriers and those foreign companies operating scheduled services in Canada. Figures for Canadian carriers include domestic and international operations, and figures for foreign companies cover miles and hours flown over Canadian territory only, and exclude passengers and goods in transit through Canada. Unit toll service refers to the transportation of passengers or goods at a toll per unit, whereas bulk service is the transportation of passengers or goods at a toll per mile or per hour for the entire aircraft. Other flying services comprise non-transportation services such as flying training, aerial photography and aerial patrol and inspection.
3.-Summary Statistics of Civil Aviation, 1962-65

| Item | 1962 | 1963 | 1964 | 1965p |
| :---: | :---: | :---: | :---: | :---: |
| Canadian Carriers- |  |  |  |  |
| Unit Toll Transportation (revenue traffic only) - |  |  |  |  |
| Departures.................................. ${ }_{\text {No. }}$ | 250,900 | 254,762 | 245,594 | 270,488 |
| Hours flown................................. " | 7612,395 | 7598,655 | $\begin{array}{r}300,798 \\ \hline\end{array}$ | $\begin{array}{r}375,379 \\ 86 \\ \hline 344 \\ \hline 027\end{array}$ |
| Miles flown.... | $76,040,318$ 4 | $\begin{array}{r}75,746,629 \\ 4,864 \\ \hline 85\end{array}$ | 76,404,782 | $86,334,027$ $5,939,267$ |
|  | $4,792,409$ $93,064,818$ | $4,864,855$ $99,063,385$ | 5,197,579 $117,497,688$ | 147,004,678 |
| Mail carried................................... | 38,430,775 | 41, 892,927 | 46, 804, 224 | 50,440,235 |
| Passenger-miles.................. . . . . . . . . . . No. | 3,463,727,291 | 3,623,020, 400 | 3,939,075,129 | 4,731,304,865 |
| Cargo and excess baggage ton-miles.......... " | 45,427, 320 | 53,618, 163 | 69,038,182 | ${ }_{21}^{88,228,205}$ |
| Mail ton-miles............................... " | 15,289,672 | 17,530,240 | 18,952,877 | 21,772,396 |
| Bulk Transportation (revenue traffic only) - |  |  |  |  |
| Departures.................................. . ${ }_{\text {No. }}$ | 220,594 230,525 | 234,685 250,988 | 252,834 | 281,088 |
| Hours fown............................... ${ }_{\text {Miles flown }}$ | 23,277, 049 | 26,818,278 | 27,046,832 | 30,903,936 |
| Passengers carried | -476,390 | 562,489 | 584,509 | 631,182 |
| Freight carried.............................. 1 lb . | 105,082,430 | 110, 102, 115 | 106,124, 248 | 108, 947, 834 |
| Passenger-miles............................. . ${ }_{\text {a }}$ | .. | .. | $469,807,322$ $17,839,881$ | $\begin{array}{r} 464,825,765 \\ 13,507,018 \end{array}$ |
| Other Flying Services (revenue traffic only) Hours flown. $\qquad$ | 83,382 | 80,930 | 97,169 | 126,469 |

3.-Summary Statistics of Civil Aviation, 1962-85-coneluded

| Item | 1962 | 1963 | 1884 | 1965p |
| :---: | :---: | :---: | :---: | :---: |
| Canadlan Carriers, All ServicesRevenue Traffic- |  |  |  |  |
|  |  |  |  |  |
| Hopurs flown....................................... | 626,302 | 630,573 | 661,508 | 781,774 |
| Miles fown. | 99,317,367 | 102,564,907 | 103,451,614 | 117, 237,983 |
| Psssengers carr | 5,268,799 | 5,427,344 | 5,782,088 | 6, 770,449 |
| Goods carried............................... . lb. | 236,578,023 | 251,058,427 | $270,426,140$ $4,408,882,451$ | $306,392,747$ $5,196,130,630$ |
| Goods ton-miles................................ . | . |  | 105,830,940 | -123,507, 619 |
| Non-revenue Traffic- |  |  |  |  |
|  | 25,882 | 21,738 | 21,363 | 29,898 |
| Passenger-miles. . . . . . . . . . . . . . . . . . . . . . . . . . ${ }_{\text {a }}$ | 176,277,219 | 203,399,987 | 207,986, 297 | 224,745,710 |
| Goods ton-mile | 6,449,798 | 6,601,370 | 7,709,768 | 7,995,872 |
| Fuel consumed.................................gal. | 191,343,196 | 207,490.519 | 218,042,305 | 249,336,707 |
| Oil consumed | 310,015 | 405,999 | 343,188 | 895,347 |
| Average employees..............................No. | 17,810 | 17,577 | 17,795 | 18,767 |
| Salaries and wages paid........................... | 105,636,970 | 108,538,372 | 116,465,350 | 122,252,542 |
| Operating revenues.............................. \$ | 284, 618,321 | 308, 885 , 913 | 334, 980, 874 | 398,623,066 |
| Operating expenses............................... | 277,333,944 | 294,142,170 | 315,569,629 | 368,223,425 |
| Canadian and Foreign Carriers, All Services- |  |  |  |  |
| Hours flown.................................... No. | 642,284 | 646,956 | 679,784 | 801,129 |
| Miles flown. | 104,851,093 | 108,282, 021 | 110,138,322 | 124,448,003 |
| Passengers carried . . . . . . . . . . . . . . . . . . . . . . . ${ }^{\text {a }}$ | 6,064,074 | ${ }^{6,278,298}$ | 6,774,652 | 7,838,539 |
| Goods carried................................ lb . | 260, 084,003 | 275,899,568 | 301,494,757 | 346,176,884 |

Summary statistics of Canadian and foreign commercial air carriers, by type of carrier, are shown in Table 4 for 1965. For the foreign carriers, hours and miles reported are those flown over Canadian territory only and passengers and goods in transit through Canada are excluded. It is interesting to note that the six scheduled carriers-those holding Class I or Class II licences from the Air Transport Board-accounted for 91 p.c. of all revenue passengers transported by Canadian carriers during 1965. The weight of goods transported by scheduled carriers amounted to approximately 69 p.c. of the total tonnage moved by all Canadian air carriers.

## 4.-Sammary Statisties of Canadian and Foreign Commercial Air Carriers, 1965

| Item | Canadian Carriers |  | Foreign Carriers |  | $\underset{\text { Carriers }}{\text { All }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Domestic Services | International Services | United States | Other Foreign |  |
| Unit Toll Transportatlon (revenue trafic only)- |  |  |  |  |  |
| Departures...................... No. | 233,573 | 36,915 |  |  |  |
| Hours flown...................... *, | 252, 120 | 83,259 | 3,959 | 14,332 | 353,670 |
| Miles flown....................... "/ | 56,173,758 | $30.160,271$ | 1,019,906 | 5. 805.217 | 93, 159, 150 |
| Pasaengers carried............... | 4. 185,277 | 1,753,990 | 1867,093 | -362,747 | 7,169, 107 |
| Goods carried $\qquad$ lb. | 147, 186,463 | 50,258,450 | 14,129,487 | 25, 647.053 | 237.221,463 |
| Passenger-miles.................. ${ }_{\text {No- }}$ | 2,622, 336,475 | 2, 108, 968,390 | 36,173, 157 | 298, 015.193 | 5,085, 493, 215 |
|  |  |  |  | $0,591,717$ | 119,912,795 |
| Eulk Transportation (revenue trafle only) - |  |  |  |  |  |
| Depsrtures..................... No. Hours fown................. | 277.224 305.044 | 3,864 14,882 |  |  |  |
| Miles flown.......................... * | 26,323,470 | 4,580,466 | 20.936 | 363,981 | 31,288, 853 |
| Passengers carried ............... "* | 508,726 | 122,456 | 7,061 | 31,188 | -669,432 |
| Freight carried. ................. . lb, | 108,483, 687 | 464,167 | , | 7,587 | 108,955,421 |
| Passenger-miles............... No. Goods ton-miles............... | $74,400,085$ $13,255,544$ | $390,425,880$ 251,474 | $\because$ | , | , |

## 5.-Expenditure and Revenue of the Department of Transport in connection with Alr Services, Years Ended Mar. 31, 1963-65

| Item | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: |
| Espenditure | \$ | \$ | \$ |
| Air Transport Board........ | 814,487 | 632,757 | 687,433 |
| Air Serrice | 5,530,511 | 5,756,335 | 6,184,861 |
| General Administration | 1,908,955 | 1,989,788 | 2,093,516 |
| Construction Services Administration | 8,721,656 | 3,816,551 | 4,101,345 |
| Crill Aviation Branch | 32,591,336 | 34,773,191 | 40,792,285 |
| Control of Civil Aviation | 4,043,075 | 5,137,669 | 6,671,301 |
| Airports and other ground services-operation and maintentance.. | 19,754,767 | 20, 280,882 | 24,113,701 |
| Airway and sirport trafic control-operation and roaintenance... | 8,168,774 | 8,717,594 | 9,423,017 |
| the operation and maintenance of airports | 344,596 | 234,921 | 272,509 |
| Contributions to assist in the establistment or improvement of local airports and related facilities. | 87,600 | 128,855 | 35,550 |
| Grants to organizations for development of civil aviation.......... | 282,474 | 272,526 | 275,294 |
| Exohequer Court Awards. . . . . . . . . . . . . . | 10.050 | 2,744 | ${ }_{9} 907$ |
| Telecommunieatlons and Electronics Branch. | 21,736,705 | 23,014,265 | 44,886,691 |
| Radio aids to air and marine navigation-administration, oper ation and maintenance. | 18,795,872 | 19,930,988 | 21,552,348 |
| Radio Act and Regulations-administration, operation and maintenance. | 2,875,287 | 3.004,437 | 3,187,654 |
| Northwest Communications Syetema- | 65,546 | 69,678 |  |
| Girt of furnishings to ITU |  | 9,162 |  |
| Payment to CNR re deficit telecommnniestions facilitiea | - |  | 148,689 |
| Meteorological Branch. | 17, 4*3,992 | 18,461,462 | 19,496,627 |
| Totals, Erpenditu | 78,177,091 | 82,438, 004 | 32,458,03\% |
| Levenue and_Receipts |  |  |  |
| Atr Services Administration | 13,128 | 6,894 | 6,833 |
| Construetion Braneh Administratio | 572 | 694 | 1,574 |
| Cirll Aviation Branch | 15,676,753 | 17,189,574 | 22,743,860 |
| Private aír pilots' cert | 18,185 | 18.402 | 40,357 |
| Airport livence fees. | 1,300 | 1,795 | 6,404 |
| Aircrait registration and sirworthiness cert | 14.155 | 14,500 | 83,662 |
| Fines, Aeronsutics Act. | 7,246 | 5,868 | 3,007 |
| Land rental. | 494,854 | 536,420 | 622,936 |
| Other rentals (living quarters, hangar space, equipment, restaurants and snack bars, ete.) | 2,372,865 | 2,437,805 | 3,362,672 |
| Concessions (gasoline and oil, taxi, restaurant and snack bar, telephone, parking, car rentals, etc.). | 3.786,018 | 4,127,081 | 5,223,337 |
| Aircrait landing fees.................................................... | 7,085,134 | 8,093,469 | 11,088,828 |
| Aircraft parking and hand | 78.086 | 120,462 | 141,859 |
| Power services. | 163,234 | 255,717 | 247,320 |
| Mess receipta. | 26,841 | 2,560 | 37,489 |
| Telephone service..... | 122,976 | 5,082 133,673 | 133,096 |
| Hanger storage space and | 82,420 | 74,380 | 102,563 |
| Sanitary fees... | 74,285 | 30.916 | 86,166 |
| Sales (water, land and buiddings, parking meters, etc.) | 268,476 | 310,039 | 463,833 |
| Gander Airport (coal sales, beating, electricity, etc.).. | 48,901 | 37,874 | 40,737 |
| Interest on investment. . . . . . . . . . . . | 8,620 |  | - |
| Air route iacilities fees...t | 444,438 |  |  |
| Joint user terminal facilities charg | 313,098 | 340,776 440 | ${ }^{539,520}$ |
| Air Trafic Control Division. | 678 144,168 | 258,694 | 375,442 |
| Sundry services and anndries........................................................ | 115,731 | 172,847 | 142,581 |
| Telecommuntcatlons and Electronics Braneh. | 3,419,280 | 8,848,166 | 4,709,219 |
| Air-ground radio service | 86,377 | 1,458,231 | 1,359, 888 |
| Communication facilitie | 2,326 | 305,114 | -3, 31692 |
| Private commercial broadcasting etation licence fees | 1,109, 190 | 975,200 | 1,720,285 |
| Radio operators' examination fees. ...... | 6,931 | 5,399 | 5,273 |
| Radio station licence fees. | 500,981 | 486, 487 | 562,252 |
| Rentals (living quarters, spsce control lines and power, etc.) | 515, ${ }_{32} 131$ | 533,219 | 614,879 |
| Sales (lath and buildinge, power services, publications, etc.) | 32,183 307 | ${ }^{32,143}$ | 52, 810 |
| Miscollaneous......................... | 11,994 | 16.882 | 58,782 |
| Refunds of previous yearg' empenditu | 49,048 | 32,676 | 59,881 |
| Meteorological Branc | 244,503 | 222,168 | 268,4\%1 |
| Totals, Rerenue and Recelpts. | 19,354,236 | 31,267, 496 | 27,721,587 |

Table 6 shows the number of civil air personnel and airport licences in force and the number of civil aircraft registered at the end of each of the years 1964 and 1965.
6.-Personnel and Airport Licences in Force and Aircraft Registered as at Dec. 31, 1964 and 1965

| Item | 1964 | 1965 | Item | 18864 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. | No. |
| Personnel Licences in Force-Pilot- |  |  | Personnel Licences in Forceconcluded |  |  |
| Glider.. | 763 | 823 | Flight engineers................ | 36 | 59 |
| Private. | 16.159 | 16,831 | Aircrsft maintenavce enziveers.. | 2,277 | 2,369 |
| Commercial....... | 2.575 317 | 2,835 359 | Airpert Licences in Force........ | 685 | 698 |
| Arrlipe trassport............ | 1,387 | 1,533 | Aircraft Eegistered- |  |  |
| Totak, Pilot Licenees. | 21,201 | 22,381 |  | 2,011 4,722 | 2,187 5,205 |
| Air navigators. <br> Air traffc controllers | 98792 | 128782 | Totals, Alrcraft Eegistered. | 200 | 200 |
|  |  |  |  | 6,583 | 7,547 |

## PART VI.-OIL AND GAS PIPELINES*

Oil Pipelines.-Since the late 1940 large capital expenditures have been made each year for oil pipeline construction. Expenditures in 1965 and 1966 were an estimated $\$ 50,000,000$ and $\$ 38,000,000$, respectively, and the cumulative total for the period 1950-66 was $\$ 703,000,000$.

The prime components of the network of Canadian oil pipelines are the trunk lines of the Interprovincial Pipe Line Company and the Trans Mountain Oil Pipe Line Company. The bulk of the domestic crude oil produced is carried by these lines. The refineries that do not rely on these systems are located in the oil producing regions such as Calgary and Edmonton. The Interprovincial system carries crude oil eastward from Edmonton receiving and discharging oil at various locations along its length. The Trans Mountain system operates similarly westward from Edmonton. Supplying these two trunk lines are pipeline systems funnelling oil from hundreds of fields into storage tanks at the pipeline terminals. Some of these feeder lines are impressive in themselves, not only in size of pipe and in length of route but in the volumes of oil that they transport. Most of the feeder lines are in Alberta, which is to be expected because of the pre-eminent position of that province in oil production. The main pipeline terminal at Edmonton has eight crude oil feeder lines, including the Interprovincial extension to Redwater, as follows:-

| Pipeline | Length | Capacity | General Area of Suppily Related to Edmonton |
| :---: | :---: | :---: | :---: |
|  | miles | bbl./day |  |
| Britamoil Pipe Lize Co. | 410 | 60,000 | south-southeast |
| Federated Pipe Lines Ltd. | 517 | 151,000 | northwest |
| Imperial Pipe Line Co.. | 311 | 78,400 | gouthwest |
| Interprovincial Pipe Line Co | 31 | 110,000 | northeast |
| Pamoil Limited (Edmonton Pipeline) | 82 | 15,000 | southeast |
| Pesce River Pipe Line Co... | 691 | 66 | northwest |
| Pembina Pipe Line Ltd., | 920 | 154,000 | west-southwest |
| Teraco Exploration Co.. | 173 | 111,000 | south |

In addition, three pipelines are connected to the Interprovincial at Hardisty, some 100 miles southeast of Edmonton. Here Gibson Associated Oil Ltd. makes deliveries of up to $15,000 \mathrm{bbl}$. daily of oil from fields just south of the pipeline terminal. Husky Pipe Line Ltd. takes deliveries of condensate and delivers a blended crude, incorporating the light condensate received and the heavy Lloydminster asphaltic crude. The Husky pipeline is a twin line system carrying the condensate to Lloydminster in one line and returning

[^272]the blended oil in the other line, which has a capacity of $15,000 \mathrm{bbl}$. daily. The third pipeline, Bow River Pipe Line Ltd., carries crudes from the most southerly oil fields in Alberta, those in the Taber area; this line has a capacity of $18,000 \mathrm{bbl}$. daily. Home Oil Limited operates a pipeline serving refineries in the Calgary area with oil from fields north of the city; the line also has connections with the Rangeland pipeline which, in turn, is linked to the Texaco line going north to Edmonton. Also serving Calgary is the oldest pipeline in Alberta operated by Valley Pipe Line Company which carries crude from the historically important Turner Valley in quantities up to $15,000 \mathrm{bbl}$. daily.

The Trans Mountain pipeline also has a second receiving terminal in Alberta; west of the community of Edson, the Peace River pipeline makes deliveries to Trans Mountain from fields extending into the northern part of the province. In British Columbia, the Western Pacific Products and Crude Oil Pipelines Ltd. carries crude over a distance of 500 miles from fields near Fort St. John in northeastern British Columbia to the Trans Mountain pipeline at Kamloops; this line has a capacity of $45,000 \mathrm{bbl}$. daily.

Three main pipeline systems carry crude oil from Saskatchewan fields to the Interprovincial pipeline. The largest is the Westspur Pipe Line Company-Producers Pipelines Ltd. network which delivers crude from the important southeast Saskatchewan producing area across the Saskatchewan-Manitoba border to the Interprovincial terminal at Cromer. Capacity of this system to Cromer is $175,000 \mathrm{bbl}$. daily. The Westspur-Producers line also carries crude delivered to it by Trans-Prairie Pipelines Ltd. from fields in the Midale area of southeast Saskatchewan. In southwest Saskatchewan, the South Saskatchewan Pipe Line Company takes medium-gravity crude from fields near Swift Current to the Interprovincial pipeline at Regina; this pipeline has a capacity of $70,000 \mathrm{bbl}$. daily. The third system is the Mid-Saskatchewan pipeline of Royalite Oil Company which carries up to $10,000 \mathrm{bbl}$. daily of crude oil from the Colevile-Dodsland area to a terminal at Kerrobert.

There is only one pipeline in Manitoba serving the producing fields in the general area of Virden. It carries crude to the Interprovincial terminal at Cromer and has a capacity of $23,000 \mathrm{bbl}$. daily.

Interprovincial Pipeline.-The system of Interprovincial Pipe Line Company is Canada's longest oil pipeline. It incorporates the wholly-owned subsidiary in the United States, Lakehead Pipe Line Company Incorporated, and has a right-of-way length of 2,025 miles including a 95 -mile lateral to Buffalo, New York. The system has two complete oil lines between Edmonton and Superior, Wisconsin, and in certain high-traffic sections, such as between Cromer and Gretna, there are three lines. The pipeline can deliver 15 grades of crude oil. Year-end capacity of the various sections of the pipeline are shown below for 1965 and for 1966 after construction is completed.

|  | Section | 1986 | 1966 |
| :---: | :---: | :---: | :---: |
|  |  | bbl /dsy | bbl./dsy |
| Edmonton-Regina. |  | 364,000 | 388.000 |
| Regins-Cromer. |  | 428,000 | 428,000 |
| Cromer-Gretua |  | 575,000 | 586,000 |
| Gretna-Superior |  | 543,000 | 548.000 |
| Superior-Sarnis. |  | 434,000 | 442.000 |
| Sarnia-Port Credit. |  | 220,000 | 229,000 |
| Westover-Bufalo.. |  | 36,000 | 25,000 |

Interprovincial serves 26 refineries: one at Lloydminster via the Husky pipeline; one at Saskatoon via Saskatoon pipeline from Milden; one at Moose Jaw via B-A Saskatchewan pipeline from Stony Beach; two at Regina; one at Brandon via Anglo Canadian pipeline from Souris; two at Winnipeg via Winnipeg pipeline from Gretna; 11 in the United States either directly or through connecting carriers; three at Sarnia; two at Oakville; one at Clarkson; and one at Port Credit.

Trans Mountain Pipeline.-The system of Trans Mountain Oil Pipe Line Company extends from Edmonton to Vancouver via Jasper and has a right-of-way length of 780 miles, including a section of 57 miles in the United States which belongs to a wholly-owned subsidiary of Trans Mountain. The capacity of the system is $250,000 \mathrm{bbl}$. daily. Trans Mountain serves eight refineries: one at Kamloops; four at Vancouver; and three in the Puget Sound region of Washington State.

Montreal-Portland Pipeline.-The Montreal refinery centre is served by a $236-$ mile pipeline which is a joint system of Montreal Pipe Line Company and its wholly-owned subsidiary in the United States, Portland Pipe Line Corporation. This line takes delivery of tanker-borne crude from Venezuela and the Middle East at Portland, Maine. In 1965, the Company completed a 24 -inch pipeline alongside the existing 18 - and 24 -inch crude oil lines. This provides a very flexible system which can deliver, under existing horsepower, 356,000 bbl. daily to the six refineries at Montreal.

Product Pipelines.-Commonly referred to as product pipelines, some of these lines transport refined petroleum products; others move the products of natural gas processing plants such as propane, butane and condensate, some of which are delivered to refineries for the manufacture of refined petroleum products. Consequently, they are a class of pipelines moving various forms of petroleum but not crude oil.

There are three product lines in Eastern Canada, all supplying markets in Ontario with refined petroleum products. Two pipelines, Sun-Canadian Pipe Line Company and Sarnia Products Pipe Line, run from refineries at Sarnia to bulk plants in London, Hamilton and Toronto. Trans Northern Pipe Line Company, once a pipeline carrying products from Montreal to markets in Ontario as far west as Hamilton, now has a two-way flow. Products from Montreal are now delivered only in the area east of Brockville, including the Ottawa valley; products from refineries immediately west of Toronto are carried eastward as far as Kingston.

In Western Canada, the recently constructed Petroleum Transmission Company pipeline carries propane, butane and pentanes plus from a plant at Empress in Alberta to Winnipeg in Manitoba, a distance of 578 miles. The predominant product carried is propane which is also marketed at various locations along the line. Elsewhere in Alberta, the Rimbey Pipe Line Company transports condensate from the Rimbey gas plant and takes deliveries from the Rangeland condensate pipeline to serve areas north of Calgary as far as Edmonton. Also going to Edmonton are three separate pipelines, one each for propane, butane and pentanes plus, running from the Leduc conservation gas plant. Near Calgary, Home Oil Company operates a condensate pipeline to serve refineries there and also to make deliveries to the Rangeland condensate pipeline. There are other condensate pipelines in Alberta, most of which are primarily associated with production and do not serve end users.

Pipeline Tariffs.-Typical of the charges to move crude oil are the following pipeline tariffs:-

|  | Charge | Distance |
| :---: | :---: | :---: |
|  | cta. per bbl. | miles |
| Edmonton to Vancouver. | 40.0 | 718 |
| Edmonton to Regina. | 20.7 | 438 |
| Edmonton to Winnipeg | 30.2 | 847 |
| Edmonton to Sarnia.. | 48.0 | 1,743 |
| Edmonton to Port Credit | 51.0 | 1,899 |
| Portland to Montreal. | 10.5 | 238 |

Natural Gas Pipelines.-Natural gas now accounts for 17 p.c. of Canada's energy requirements and, in addition, large volumes are delivered to markets in the United States. Although relatively small amounts of natural gas are transported in other areas of the world as a liquid under refrigeration, all of the gas used in Canada as well as in North America as a whole is moved by pipeline. Despite the current importance of natural gas,
major gas pipelines were only established in Canada in recent years. It was not until 1958 that natural gas was used in provinces as far east as Quebec. Now, however, there is an extensive network of pipelines serving most centres of population from Vancouver to Montreal and delivering gas to several points of export on the United States border.

Since the mid-1950s, wheo large-volume gas removal was authorized from Alberta, capital expenditures in gas pipeline construction have constituted a significant proportion of the country's total outlay for transportation facilities. In 1965 and 1966, capital expenditures of $\$ 61,000,000$ and $\$ 65,000,000$, respectively, were made. The cumulative total in the period $1955-66$ was $\$ 1,247,000,000$ for gathering and transmission systems with an additional $\$ 796,000,000$ for distribution systems.

Pipelines are usually categorized under three headings-gathering lines, transmission lines and distribution lines. The gathering lines are those that take gas from the wells or separators to the field gate or some other specified point. Transmission lines are normally the large diameter pipelines that take gas from gathering lines and deliver it to the distributors principally at the 'city gate' In total there were 43,360 miles of all types of gas pipeline in operation at the end of 1965 , of which 5,029 miles were gathering, 13,806 miles were transmission and 24,525 miles were distribution.

Unlike oil pipeline companies which are common carriers-they transport the oil for a fixed charge-gas pipeline companies, with few exceptions, own the gas that is transported. The principal exception is the Alberta Gas Trunk Line Company which delivers virtually all of the gas exported from Alberta to the provincial boundary where main transmission companies accept delivery. This is an important pipeline system because most of the Canadian gas reserves are in Alberta. The right-of-way distance of Alberta Gas Trunk is 1,788 miles.

Some details of the main transmission systems are contained in the following paragraphs.

Trans-Canada Pipeline.-The Trans-Canada pipeline, extending from the Alberta border near Burstall, Sask., makes its way eastward through Saskatchewan and Manitoba to the Ontario Lakehead cities of Port Arthur and Fort William and then follows a broad, northerly-arched route through the clay belt of Ontario, then southward via North Bay to Toronto. There the line divides, one part going to the western region of Ontario and the other, eastward, along the northern shore of Lake Ontario and the St. Lawrence River to Montreal. Lateral pipelines serve communities that are not within the immediate reach of the main pipeline. Trans-Canada is Canada's longest pipeline with a right-of-way distance of 2,384 miles. The maximum amount of gas delivered in any one day by the company in 1965 was $1,249,000 \mathrm{Mcf}$. Export sales average about $210,000 \mathrm{Mcf}$. daily.

Westcoast Transmission Company.-The supply of gas for Westcoast comes mainly from fields in northeastern British Columbia but significant quantities are gathered in Alberta. The main line from Fort St. John runs in a southerly direction to Vancouver and to the United States border at Sumas, B.C. An extension to its system from the Fort St. John area to the Fort Nelson area permits the pipeline system to pick up gas from the main areas stretching from Dawson Creek to the Yukon-Northwest Territories border. The right-of-way distance of the Westcoast system is 892 miles.

Alberta Natural Gas Company.-Although the Alberta Natural Gas pipeline is only 107 miles long it forms part of one of the major gas export pipelines that carries Canadian gas as far south as California. The line extends from the Alberta border through the Crowsnest Pass to Kingsgate, B.C., where it crosses the International Border and continues through Idaho.

Other Gas Pipelines.-There are many other natural gas pipelines operating in Canada. Many are gathering systems and others are exclusively distribution systems. They constitute important sectors of the country's gas pipeline industry, as is evidenced by their aggregate pipeline mileage. To mention a few, Canadian Montana pipeline gathers gas
in the southeastern part of Alberta and transports it soutbward into the State of Montana; the company also operates a line that purchases gas from Alberta Gas Trunk Lines in the southwestern part of the province. In Saskatchewan tbe system of the Saskatchewan Power Corporation has gathering, transmission and distribution systems and delivers all of the gas for sale in Saskatchewan; the Corporation had 4,670 miles of pipeline in operation at the end of 1965. Three other systems have gathering, transmission and distribution systems: in Alberta, Canadian Western Natural Gas Company Limited operates in the southern portion of Alberta and Northwestern Utilities in the northern area, the combined length of pipe being 5,072 miles; Union Gas operates mainly in southwestern Ontario picking up gas from some fields that are the oldest in Canada. These and many other systems make up the fast-growing network of gas pipelines in Canada which serves domestic, commercial and industrial customers in all provinces except the Maritimes.

Oil Pipeline Statistics.*-There were 45 oil pipeline companies operating in Canada at the end of 1965. Pipeline deliveries shown in Table 1 were made to non-pipeline carriers, foreign pipelines, and terminals including refineries and distributing centres.

| *Statistics of oil pipelines are given in greater detail logue No. 55-001). <br> 1.-Pipeline Move | in the DBS m nents of O | thly repor 1502-65 | ine | port (Cata |
| :---: | :---: | :---: | :---: | :---: |
| Item | 1962 | 1963 | 1964 | 1965 |
|  | bbl. | bbl. | bbl. | bbl. |
| Eeceipts |  |  |  |  |
| Crude Oil and Pentanes Plus- |  |  |  |  |
| Canadian. | 254,874,604 | 274, 030, 166 | 297,792,525 | 315, 623,651 |
| Lmports............................. | 78,811,557 | 93, 559,497 | 94,230,399 | 92, 234, 807 |
| Canadian............................ | 53,435,886 | 63,050, 700 | 67,285,979 | 75,697,987 |
| Imaports. | 337,548 | 441,095 | 544,040 | 364, 579 |
| Totals, Net Receipts. | 287,459,593 | 431,081,458 | 459,852,943 | 483,870,884 |
| Deliveries |  |  |  |  |
| Crude Oil and Pentanes Plug- |  |  |  |  |
| Canadian. | 245,872,459 | 273,784,220 | 290,207,682 | 297,394,333 |
| Exporta....................... | 85,789,864 | 90,248,379 | 101, 532,815 | 107,651,950 |
| Canadian......... | 52,800,070 | 62,414,709 | 84, 803, 049 | 73, 188,318 |
| Exports. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 831.974 | 1,034,308 | 2,712,817 | 2,679,069 |
| Totals, Net Dellveries | 385,254,367 | 427,481,616 | 459,256,163 | 480,923,698 |

Revenue and employee data shown in Table 2 are not complete; both revenue and employee figures have been omitted for some companies, since pipeline operation forms only a part of the activities of these establishments and the data are not separable.
2.-Operating and Financial Statistics of Oil Pipelines, 1962-65

| Item | 1962 | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: |
| Pipeline Mileage- |  |  |  |  |
| Trunk lines.................................. No. ${ }_{\text {Gsthering }}$ | 6,543 | 6,926 | 7,952 | 8,259 |
| Gathering lin |  | 3,681 | 3,792 | 4,056 |
| Deily Av. of Net Deliveries- |  |  |  |  |
| Trunk lines l............................. bil. | $1,038,194$ 658,595 | 1,164,640 | 1,240,007 | 1,314,842 |
| Barrel Miles |  |  |  |  |
|  | 166,208, 113 | 175,492,600 | 191, 241, 603 | 203,899,419 |

2.-Operating and Financial Statistics of Oil Pipelines, 136\%-85-concluded

| Item |  | 1262 | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Av. Miles per BarrelTrunk linea. | No. | 439 | 410 | 416 | 425 |
| Property account. | , | 557,709,996 | 582,515, 772 | 617,758,245 | 654,023,499 |
| Long-term debt... | 8 | 309, 781, 883 | 298,791,748 | 291,144,511 | 299,200,374 |
| Opersting revenues | \$ | 122,747, 571 | 128, 635,447 | 138, 478, 844 | 145, 809,378 |
| Operating experses ........... |  | 28,056, 494 | $30,436,544$ $39,318,153$ | $32,118,605$ $45,997,272$ | 34,498, 816 |
| Net income (after income tax) Av. employeea............ | No. | $35,663.637$ 1,496 | $39,318,153$ 1,501 | 45, 997,272 1,492 | 55,521,157 |
| Salaries and wages.. | \% | 9,934,058 | 10,323, 846 | 10,665,313 | 10,929,026 |

Gas Pipeline Statistics.-As already stated, the natural gas transport industry became a significant factor in the Canadian economy in 1957 with the completion of the first of several extensive pipelines constructed to transport natural gas from the field or processing plant to distribution outlets. Consequently, the distribution industry also greatly increased deliveries to consumers from that time. Tables 3 and 4 illustrate this expansion for the years 1962-65.
3.-Receipts and Disposition by Natural Gas Utilities, 1962-65

4.-Operating Statistics of Natural Gas Utilities, 1962-65

| Item | 1962r | 1963 | 1964 e | 1965 |
| :---: | :---: | :---: | :---: | :---: |
| Daily average sendout............................ Mcl. | 2,213, 589 | 2,323,284 | 2,560,920 | 2.811,923 |
| Opersting revenues.............................. \% | 371,883,004 | 396,536,151 | 437,885,637 | . |
| Salaries and wages........................... | 51,540,602 | 57,726,901 | 59,995, 2 , 511 | $\cdots$ |
| Average annual earnings per employee........... | 5,150 | 5,288 | 5,511 | . |

## CHAPTER XX.-COMMUNICATIONS

## CONSPECTUS

|  | Pate |  | Page |
| :---: | :---: | :---: | :---: |
| Section 1. Telecommdnications. | 861 | Subsection 4. Federal Government Civil <br> Telecommunicstions and Electronics |  |
| Spectal Article: The Development of Telecommunications in Canada |  | Services. $\qquad$ ...... ... | 875 |
| Telecommunications in Canada..... | 862 | Subsection 5. Public and Private Commercial Mierowave Facilities | 879 |
| Subsection 1. Government Control over Telepommunications Agencies. . . . . . . . . . . | 869 | Subsection 6. Miscellaneous Radio Communication Services. . . . | 881 |
| Subsection 2. Telephone and Telegraph Statistice. $\qquad$ | 870 | Bubsection 7. Radio and Television Broadcasting. | 881 |
| Subsection 3. Overseas Telecommurications |  | Section 2. Postal Service. | 889 |
| Services | 873 | Segrion 3. The Preas. | 891 |

The interpretation of the symbols used in the tables throughout the Year Book will be found on $p$. viii of this volume.

## Section 1.--Telecommunications*

Communications media in Canada have been shaped to meet the needs of the country. Great networks of telephone, telegraph, radio and television facilities, inextricably bound together, provide adequate and efficient service which, in this era of electronic advancement, is under continual technological change and development. The familiar challenges of the country-its size, its topography, its climate, its small population-which have reared their heads in other areas of development, have had to be faced as well in the field of communications. That these have been met is evidenced by the fact that today Canada possesses communication facilities and services which are second to none in the world and which are somewhat unique in structure. On the one hand there is a group of telephone companies acting in concert to provide national services and on the other there are two railway companies providing services, each of which is national in scope. All companies provide a most comprehensive total communications network. Television relay, data exchange, telex, conventional telephone and standard telegraph transmission services are all included, intermeshed and intertwined. The two railway companies, one publiely and the other privately owned, are in competition with the private and public telephone groups. This mixture of public and private ownership-all in competition-has served Canada well and may provide a prototype of what might work internationally as well.

All around us massive strides are being made in communications-dramatic progress has established a virtually instantaneous global communications system but the advance has only begun. INTELSAT, the International Telecommunications Satellite Consortium, has opened a fresh approach to the management and development of a world-wide communications system and Canada, as a member of INTELSAT, will play a continuing and influential role in the growth of satellite communications. A proposal recently placed before the Federal Government, spearheaded by a private broadcaster and a space electronics company, put forward a domestic satellite system as the communications vehicle to cover the country from coast to coast and from the border to the Arctic-for message traffic, radio and television-and a commercial communications company, studying the

[^273]opportunities opened by satellite communication, plans to build an earth station in Canada to test the practicality of this concept. The federal Department of Transport is conducting an intensive study designed to ascertain the facts and the implications of this new era of communications, which appear to be without limit.

The development of telecommunications in Canada is outlined in the following special article.

## THE DEVELOPMENT OF TELECOMMUNICATIONS IN GANADA*

From the dawn of history until a mere 150 years ago, communications over any distance was no faster than physical transportation-about 10 miles an hour. The first significant change occurred about 1800 when visual telegraphs or semaphore stations appeared in North America and Europe. In public demonstrations, signals were transmitted at unbelievable speeds up to 170 miles a minute, although under normal conditions they were much slower.

Electric signal systems introduced a new era of speed and accuracy to most parts of the world and 1837 is perhaps the first important date. In that year, Cooke and Wheatstone invented their Needle Telegraph in England and Samuel Morse invented his famous code and telegraph instrument in the United States. Within 10 years, long-distance electric telegraphy became a reality and by 1866 there were 3,000 telegraph offices apread across North America.

About 1847 the insulation of copper conductors became practical and water, the last great barrier, could be crossed. In 1851, a telegraph cable was laid across the English Channel and men began to think of crossing the Atlantic. After a number of failures, this too was accomplished in 1866 and by 1874 telegraph messages could be sent almost anywhere in the world.

## Pioneering Telephony in Canada

Meanwhile, scientists in many parts of the world had been trying to transmit speech electrically, usually by trying to adapt telegraphic techniques to the problem. However, the idea for the "membrane speaking telephone" came to Alexander Graham Bell in July 1874, when he was on vacation at his father's home in Brantford, Ontario. The idea was verified experimentally (although accidentally during some experiments on a harmonic telegraph) in Boston in 1876 and patented in 1877. In August of the latter year, two "long-distance" telephone calls were made, each over a distance of about four miles. The first was from Brantford to Mount Pleasant and the second from Brantford to the Bell Homestead. What is generally recognized as the world's first long-distance telephone call was made the following week; it was from Brantford to Paris, Ontario, via Toronto, a distance of 68 miles. These calls were made over the telegraph lines of the Dominion Telegraph Company.

In 1877, the first telephone equipment to be leased in the Commonwealth was used to connect the office of the Prime Minister with that of the Governor General in Ottawa and in the following year the first telephone exchange outside the United States was installed in Hamilton, Ontario. One of the original telephones, in working order and connected to a reproduction of the Hamilton exchange, is preserved in the Bell Telephone Company's "Panorama of Telephone Progress" in Montreal. Also in 1878, the manufacture of telophone equipment commenced in Brantford. Bell assigned the Canadian rights to his patents to his father and in 1880 The Bell Telephone Company of Canada was incorporated. By the end of the year, it had 13 exchanges serving 2,100 telephones and service between cities as far apart as Toronto and Hamilton, etc., was available to the public.

[^274]
## Development of the National System

The inventions of many people in many countries have since contributed to the advancement of telephony and Canada has remained in the forefront in applying these inventions.

In 1900 , the common battery system was introduced and began to replace the older magneto systems and also made possible the development of smaller, more attractive and efficient telephone sets. Several automatic switching systems were introduced around the turn of the century with limited success. However, it was not until the early 1920s that satisfactory systems for large offices were installed using the Strowger Step-by-Step system-first invented in 1886. This system became the workhorse of the world and even today serves more subseribers than any other system. But Step-by-Step has its limitations and these became apparent as the Continent moved toward Direct Distance Dialing. The planning of an economical long-distance network entails a choice of routes for a call. There is usually a most direct route, which will be the first choice, backed up by one or more less-direct routes in case the preferred route is busy. In Step-by-Step systems, the digits dialed by the subscriber are used up as fast as he dials them and if the caller ends up being connected to a busy circuit, these digits cannot be retrieved and used to select an alternate route. Another disadvantage with Step-by-Step is that the heavy sliding contacts tend to be noisy, even with the best of maintenance, and the noise level builds up and becomes objectionable as circuits become longer and more switches are added.

In 1950, a new and completely different type of switching system, called Crossbar, was introduced in North America. Instead of the subscriber having direct control over the switches that set up the talking path as in Step-by-Step, the digits dialed by the subscriber are routed to a temporary memory that is a part of the control equipment. This information is retained while other parts of the control equipment search up to five alternate routes to complete a call. The system derives its name from the Crossbar switches used in the talking path. These switches require almost no maintenance and are not as noisy as the older Step-by-Step switches. There is another significant difference-when the call is completed, the information is removed from the temporary, "memory and the control equipment is ready to serve another subscriber. The control equipment is available to all sulbscribers and hence Crossbar systems are said to use the "common control" principle.

Crossbar systems were first introduced to Canada for operator-dialing of long-distance calls in 1955 and for subscriber-dialed local calls in 1956 and now have found general application across the country for all sizes of offices. It is undoubtedly true that, without this switching development, Direct Distance Dialing by subscribers across the whole of the Continent could never have become what it is today.

It is equally true, of course, that gigantic strides had to be taken in the development of transmission equipment. Less than 10 years after the first demonstration of the telephone at Brantford, some 3,000 miles of "long-distance" telephone lines were in service and double that mileage in the following five years. This rapid early growth was the result of technological developments which today may seem elementary. New and better telephone transmitters had been developed by 1885 and the same year copper wire was first used instead of iron wire on long-distance lines. A new industry, made possible by intensive research, was being created.

In 1890 the single-wire circuit with ground return was replaced by two-wire circuits and in the following few years the Loading Coil and the Phantom Circuit jncreased the range and capacity of long-distance networks.

Telephone calls over unlimited distances were made possible only by the invention of the electron tube. In 1915 the first commercial application was made on a transcontinental telephone line in the United States and the same year a combination of telephone and radio facilities was used to transmit speech across the Atlantic. The following year, 1916, the first telephone call between Montreal and Vancouver was made over a combination of Canadian and United States lines. On the Diamond Jubilee of Canada's Confederation in

1927, the Governor General and the Prime Minister were able to talk to Canadians from coast to coast using telephone and telegraph facilities and the trans-Canada radio network. Carrier equipment, which enables more than one conversation to be carried on the same pair of telephone lines, was first used in Canada in 1928. In 1932 the first totally Canadian transcontinental telephone network was opened and the first direct radio telephone link with England was inaugurated.

Although continued refinements were made to this national and international network, the next dramatic changes did not occur until the 1950s. In that decade the first transCanada microwave system was built and installed to carry telephone conversations and television programs from coast to coast. Also, the first submarine telephone cable was laid across the Atlantic Ocean, replacing the radiotelephone circuit that had been in use for 25 years.

Thus, by 1960 , by keeping pace with technological developments throughout the world and particularly in the United States, Canada had a highly automated national telephone network, fully integrated into the over-all North American network and with excellent connections to other, more distant countries.

## The Telecommunications Team

The national telephone network was not the result of technological development alone but the creation of many men working together in organizations that evolved and adapted themselves to meet changing conditions.

When the telephone industry was first established in Canada in 1877, representatives or agents of many companies were located in towns and cities across the country, sometimes in direct competition with each other in the same city. Then in 1880, as mentioned earlier, The Bell Telephone Company of Canada was organized to consolidate nearly all the telephone business then developing. At first the Bell planned to serve the whole of Canada but problems created by geography and the scattered nature of settlement influenced it to limit operations to Ontario and Quebec. Separate companjes developed in British Columbia and the Maritimes and responsibility for providing telephone service in the Prairie Provinces was undertaken by the respective provincial governments. Today there are 2,330 telephone operating companies which differ widely in size and in scope of operations. They range from tiny rural co-operatives serving perhaps a few families to large shareholderowned and province-owned systems which number their customers in hundreds of thousands. This blend of large and small, private and government ownership is probably unique in the world.

Although there are many companies providing telephone service, each has a monopoly within its own territory. Direct competition was found to be inefficient and had ceased in Canada by 1890 and the operating companies are subject to government regulation at the appropriate level-federal, provincial or municipal.

With so many independent administrations, the need for a new organization to promote co-operation within the industry and the exchange of information about technical and operating procedures became apparent. In 1921 the Telephone Association of Canada (TAC) was formed, its members being the 12 major telephone companies in Canada; this association also works closely with the smaller independent systems. As the barriers of distance were successively overcome, an even more closely knit organization was required to develop and maintain a coast-to-coast long-distance network that would connect to the facilities of the local telephone systems across the country. In 1931, the Trans-Canada Telephone System was established, its members being:-

[^275]In 1949, the Trans-Canada Telephone System acquired a new member, the Canadian Overseas Telecommunication Corporation (COTC), a Crown Corporation established to assume control and operation of all overseas communications involving Canada. The COTC operates the Canadian terminals of overseas circuits and is a partner with appropriate foreign administrations in the construction and operation of the necessary transmission facilities such as trans-oceanic cables (see pp. 873-874).

The need for co-operation between operating agencies extends from the national to the international sphere. Following the setting up of the International Telegraph Convention of 1865 and the International Radio Telegraph Convention of 1906, the International Telegraph Union was formed because, in its own words, "telecommunications could span vast distances, but not national boundaries" That Union grew into the International Telecommunication Union (ITU), with headquarters in Geneva, and is the recognized special agency of the United Nations in all matters related to telecommunications.

The Canadian telecommunications industry participates actively in the affairs of the ITU, which include the planned development of international circuits, the study of related technical and operating problems and also assistance to developing countries (see also p. 174). The Telephone Association of Canada and the telecommunications departments of the railways have membership as operating companies. Most of the Canadian manufacturers of telecommunications equipment, in whose laboratories originate the new devices and technology, have joined the ITU as scientific members. This massive contribution from Canadian industry is co-ordinated by the Department of Transport, which is the senior government regulatory body for telecommunications in Canada and is naturally the official voice of Canada in the ratification of international commitments.

In commenting on the people and organizations involved in telecommunications it should be mentioned that the industry, in operating and manufacturing, employs more than 100,000 people and directly supports over 400,000 people, which is about 2 p.c. of the total population of Canada.

## Recent Developments

It is apparent that the rate of telecommunications development has been accelerating, particularly over the past 15 years, and the contributing factors are undoubtedly the increase in population coupled with rising standards of living, the need to communicate leading to the information explosion, and advances in the art of telecommunications itself.

It is interesting to note that many recent technological advances, such as communication via satellites and Pulse Code Modulation, were predicted and reasonably well understood more than 20 years ago but the necessary components were lacking. This situation changed when a completely new generation of components was introduced in the 1950 s , stemming from the invention of the transistor at the Bell Laboratories in 1948. At first, transistors were produced as individual components and were smaller, cheaper, more reliable and dissipated less heat than the electron tubes they replaced. But further developments came rapidly as manufacturers around the world saw the many advantages of the new devices. The single transistor gave way to integrated and thin film circuits produced by micro-photography. From a wafer-thin slice of silicon the size of a 25 -cent piece, about 600 Monolithic Integrated Circuits can be made, each containing perhaps a hundred components. Theoretically, 9,000 of these components, enough to make a modest computer, could be contained in a thimble. However, the mechanical problems of mounting and connecting the components and allowing for heat dissipation mean that the optimum packing density is beyond reach at the moment. Another point to note is that, contrary to previous experience, integrated circuits have proved to be cheaper and are more reliable than the equivalent individual components.

The economy, reliability and small size of the new solid state devices-and their fast operating times when used in switching applications-have made possible the changes we see around us, from small transistor radios, computers and sateilite communications to the less obvious changes in the telecommunications network. Electronic switching systems have now been developed that will eventually supersede Crossbar systems. This new equipment uses the common control technique that was pioneered with Crossbar but the electronic control circuitry is many times faster than the relay type circuits currently in use. Somewhat paradoxically, the increased speed of electronic switching will not directly reduce the time a subscriber needs to reach the party with whom he wishes to talk because, already, calls are connected almost as soon as the originator has finished dialing. But the faster electronic equipment can refer to more information when setting up a call and the memory circuits that store this information will use programmed logic which is easier to change than the wired logic of existing common control systems. It is anticipated that this combination of speed and of a larger, more flexible memory will result in a more personalized form of telephone service. For example, subscribers may be able to reach people they call frequently by dialing only two or three digits instead of seven, or they may be able to arrange for incoming calls to be routed temporarily to another location. These and many more services can be provided in this new age but it is not certain what form these services will take, because no one knows which of the services telephone users will want and be prepared to pay for.

Another benefit to be derived from the increased intelligence of electronic systems and the greater reliability of its solid state components will be an increased ability to take care of its own operation. Already, common control switching systems can isolate and report defective units. A limited amount of extra equipment is supplied so that Crossbar systems can continue to operate unattended for months between visits by a maintenance crew. This trend will be carried further and electronic switching offices will be self-checking and self-repairing to a degree that leads switching engineers to talk of an "immortal machine"

Recent developments in the field of transmission have been equally significant and exciting. Some, such as over-the-horizon radio and satellite communication, have caught the imagination of people everywhere. But they have also shown that radio waves are becoming very congested and that the conservation and efficient use of the available frequency spectrum is a matter demanding international regulation of the highest order. Because of the tremendous demands for frequency bandwidths resulting from the "communications explosion", two recent innovations may prove to be crucial to the development of telecommunications over the remainder of this century. The first is the reversion to cable. Recent research has lead to the evolution of high capacity, high quality, longhaul transmission over co-axial cable that is economical and fully competitive with microwave equipment. The second is more properly an invention-the discovery of the "Laser" This makes available tremendous bandwidths at the lower end of the light spectrum, i.e., at frequencies far above those used for telecommunications today. In so far as bandwidth is the natural resource used for telecommunication transmission, the invention of the Laser has been compared in significance with the addition of nuclear power to the world's available sources of prime power.

Mention should also be made of a new transmission multiplexing technique, Pulse Code Modulation (PCM), by which a voice circuit is sampled at regular and frequent intervals. Each sample of the signal is then coded in a digital manner similar to a telegraph signal. The coded samples from many voice circuits are then interleaved and transmitted over a single pair of conductors to a distant point, where they are sorted, decoded and the original signals reconstituted. PCM is interesting for many reasons. First, the principles were discovered and disclosed 30 years ago but the practical application was dependent on the developments of solid state devices over the past ten years. Second, it is the first time that digital or telegraphic rather than analog techniques have been used for the transmission of speech. This has the advantage that on long circuits, amplifiers can be used which differentiate between the desired signal and undesired noise and which

The introduction of the Electronic Switching System is the most important technological advance in telephony in Canada since the early 1920 s-it not only offers a great variety of new telephone services today but is capable of providing future services not yet dreamed of.

A technician checks the central control section of the Montreal ESS, which co-ordinates and commands all system operations.

Miniaturization is of great importance in the design of the System, the space requirement for which is about one fifth that of the replaced system.

High-power magnification equipment is $\leftarrow$ used to test microcircuits prior to mounting on a 'header' $\frac{3}{8}$ " in diameter.


A pencil points out the size of these minute circuits.
will amplify the former and reject the latter. Third, PCM introduces the principle of Time Division Multiplexing as an alternative to Frequency Division Multiplexing. Fourth, and perhaps most important, the rapid sampling of different voice circuits with PCM is really a form of electronic switching. Switching and transmission have now become integrated rather than closely related disciplines.

## Telecommunications in Transition

The previous paragraphs have covered various aspects of the changing role of telecommunications in Canada and elsewhere in the world and indicated that developments are now coming at a prodigious rate. The industry has entered the most dramatic period of transition of its existence, both in its impact on the lives of all of us and in its own composition. It is no longer possible to think of telecommunications merely in terms of telegrams and telephone calls when the existing networks are already carrying data, drawings and television. Telecommunications today must be defined as "the electrical transmission of intelligence" and its potential impact is still a matter of speculation, although recent applications may give some clues.

In our homes and at work we are aware of a more flexible, personalized and capable telephone service and this trend will certainly continue as new developments become available. The transmission of data and pictures is already revolutionizing many aspects of business including inventory control, the scheduling and loading of transportation facilities and discussions between suppliers and customers of technical specifications. Some firms have used private voice-video facilities to conduct personnel interviews where long distances separated the participants. But it may well be that the new telecommunications will have its greatest impact in the field of education. Regular television programs have included educational material for many years and the soundness of the techniques has been demonstrated in many countries. More recently, lectures without pictures were conducted over regular telephone lines and it was found that lecturers and students adapted rapidly to the changed environment. For many subjects the "tele-lecture" has proved to be more effective than one-way television because the student can participate over the telephone circuit. An ambitious Canadian venture in this field is being conducted jointly by the University of Saskatchewan and Saskatchewan Government Telephones. An instructor in Regina lectures in mathematics to classes in several other cities. His notes and sketches are algo transmitted via a Visual Electronic Remote Blackboard (VERB) and projected onto screens in the classrooms.

The impact of telecommunications on education will also affect adults. Many jobs are disappearing and people have to be re-trained for completely new work. Other jobs have been altered by technological advances so that the educational requirements to perform the jobs satisfactorily have also changed. This applies not only to professional employment but also to the so-called "unskilled" workers. Although all levels of government are becoming increasingly involved in this type of re-training and education, much of the responsibility for it falls on industry.

Today there is more need for education of all kinds but at the same time there is a shortage of teachers. Telecommunications is one possible solution that has attracted the attention of many companies and individual teachers, scientists and engineers. The manmachine interface is being studied. Even the learning process itself has been re-examined and this has lead to programmed learning and teaching machines.

Society's present methods of stering information for reference purposes in libraries, in correspondence files and in technical drawings are also being challenged. What can be stored on paper can also be stored electronically, regardless of whether the information consists of business records or is of a purely educational nature. The combination of modern computers and telecommunications make the storage, retrieval and processing of information at large centralized information centres easy and convenient. Computer time
sharing means that a small business can avail itself of these facilities just as readily as a large business. For example, it is quite conceivable that a dentist in Moose Jaw might use a computer in Regina to maintain his records and send out his bills. Electronic reference libraries will not only provide information, they will also ascertain the inquirer's current level of knowledge and then select the additional information he needs. In other words, the equivalent of the capable assistance of a professional librarian in a large library could be available to a person in a small remote community.

Although it is not possible here to more than suggest some of the effects of the new technology, there is a growing belief that the advances in communications are changing basic living patterns. Professor McLuhan, Director of the University of Toronto's Centre for Culture and Technology, has already attained an international reputation for his analysis and observations on these basic changes. We are all aware that, through television and telecommunications, we are more up to date on events in distant parts of the world, that we are members of a wider community which McLuhan calls living in an "Electronic Village" His epigram that "the medium is the message" is intended to focus attention on the media used for the origination, transmission and display of information in which telecommunications plays an important part.

This closer relationship between the new telecommunications and other technologies and disciplines is most significant. The boundaries between telecommunications and computers and information handling, etc., will become less clearly defined and new companies will challenge the established telecommunication manufacturing and operating companies. The rate of technological advance should further increase as developments in one area of communications stimulate developments elsewhere and the main problem may well be to remain the masters of what we can create.

## Subsection 1.-Government Control over Telecommunications Agencies

Telephone and telegraph companies incorporated under the Federal Parliament are subject to the jurisdiction of the Board of Transport Commissioners in the matter of rates and practices under the provisions of the Railway Act (see pp. 786-787); other companies are responsible to provincial regulatory bodies. International telegraph and telephone communications are handled subject to the International Telecommunication Convention and the Regulations thereunder and/or under regional agreements. Tolls charged to the public for radio communication service are subject to the provisions of the Regulations made under the Radio Act. Overseas cables landed in Canada are subject to the External Submarine Cable Regulations under the Telegraphs Act.

Radio communications in Canada, except for those matters covered by the Broadcasting Act, are regulated under the Radio Act and Regulations and also under the Canada Shipping Act and Ship Station Radio Regulations. In addition, radio communication matters are administered in accordance with the International Telecommunication Convention and Radio Regulations annexed thereto; the International Civil Aviation Convention; the International Convention for the Safety of Life at Sea; the Inter-American Telecommunication Convention and the Convention between Canada and the United States of America relating to the operation by citizens of either country of certain radio equipment or stations in the other country; and also in accordance with such regional agreements as the Agreement between Canada and the United States for the Promotion of Safety on the Great Lakes by Means of Radio, the Agreement between Canada and the United States relating to the Co-ordination and Use of Radio Frequencies Above Thirty Megacycles per Second, the Inter-American Radio Agreement, the North American Regional Broadcasting Agreement, the Canada-USA Television Agreement and the Canada-USA FM Agreement (see also p. 876).

National radio broadcasting in Canada entered its present phase in 1936 when, with the passage of the Canadian Broadcasting Act, the Canadian Broadcasting Corporation replaced the Canadian Radio Broadcasting Commission. The Act gave the Corporation wide powers in the operation of a national broadcasting system and gave to the Minister of Transport the technical control of all broadcasting stations.

During 1958 the Government established a Board of Broadcast Governors and the Canadian Broadcasting Corporation Board of Governors was abolished. The Board of Broadcast Governors regulates the establishment and operation of networks of radio and television broadcasting stations, the activities of public and private broadcasting stations and the relationship between them, in the interest of providing a national broadeasting service of high standard. basically Canadian in content and character. Although the Minister of Transport is the licensing authority under the Radio Act, the Broadcasting Act requires that applications for broadcasting station licences or for any change in an existing broadcasting station be referred to the Board of Broadcast Governors for its recommendation before being dealt with by the Minister. (See also pp. 881-882.)

During 1966 the Government published a White Paper on Broadcasting proposing amending legislation whereby the Board of Broadcast Governors would have full power to issue broadcasting licences, subject only to technical evaluation and certification by the Department of Transport. The proposed new legislation would also provide that com-munity-antenna television systems be treated as components of the national broadcasting system, subject to licensing, regulation and control by the Board of Broadcast Governors.

## Subsection 2.-Telephone and Telegraph Statistics

Telephone Statistics.-In 1965 there were 2,374 telephone systems operating in Canada compared with 2,458 in 1964; of these systems 2,330 reported in 1965 and 2,421 in 1964. Co-operative systems in rural districts decreased from 2,144 in 1964 to 2,072 in 1965 and incorporated companies from 174 to 157. The largest of the jncorporated companies, The Bell Telephone Company of Canada, which operates throughout the greater part of Ontario and Quebec and in Newfoundland and the Northwest Territories, served 61 p.c. of all the telephones in Canada in both 1964 and 1965 and the British Columbia Telephone Company, also shareholder-owned, served 9.5 p.c. of the total in 1965 . The number of telephones in use increased by 65.4 p.c. during the 1956-65 period.

## 1.-Pole-Line and Wire Mileage and Number of Telephones in Use, 1956-65

Nors.-Figures from 1011 are given in the corresponding table of previous Year Booke beginning with the 1938 edition.

| Year | Syatems | Roate Mileage | Length of Wire | Telephones in Use |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Business | Residential | Total | Per 100 Population |
|  | No. | miles | miles | No. | No. | No. | No. |
| 1956. | 2,661 | 269,303 | 16,410,897 | 1,334,403 | 3,164,922 | 4,499,325 | 28.0 |
| 1957. | 2,637 | 274, 334 | 18,161,444 | 1,409,446 | 3,417,689 | 4, 827,135 | 29.1 |
| 1958. | 2.619 | 280,884 | 20,260,410 | 1,486,393 | 3.681 .900 | 5,118. 293 | 30.0 |
| 1959. | 2.605 2.558 | 267,737 274,855 | 22,791,129 | $1,568,735$ $1,673,915$ | $3,870,288$ $4,054,252$ | $5,439,023$ $5,728,167$ | 31.2 32.2 |
| 1961. | 2,509 | 306,167 | 26,986,478 | 1,729,599 | 4,284, 410 | 6,014,015 | 32.6 |
| 1962 | 2.430 | 314,523 | 28,930,413 | 1,818,895 | 4.512,553 | 6,329,448 | 33.7 |
| 1963. | 2,296 | 284,202 | 31,257,977 | 1,910,178 | 4,746,435 | 6.656, 613 | 34.9 |
| 1964. | 2,421 | 281, 0331 | 33,731,622 | 2,016,182 | 5.003,182 | 7.019.374 | 38.1 |
| 1965. | 2,330 | 283,478 ${ }^{1}$ | 33,666,557 | 2,142.256 | 5,302,815 | 7,445,071 | 38.1 |

[^276]2.-Telephones in Use, by Province, 1565

| Province or Territory | On Individual Lines |  | On 2-and 4-Party Lines |  | On Rural Lines |  | $\begin{gathered} \text { Public } \\ \text { Pay } \\ \text { Telephones } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Business | Residential | Business | Residential | Business | Residential |  |
|  | No. | No. | No. | No. | No. | No. | No. |
| Newfoundland. | 9,343 | 24,683 | 1,151 | 30,479 | 1 | 335 | 645 |
| Prince Edward Island. | 2,110 | 7,679 | 1, 50 | 3,088 | 331 | 7,430 | 209 |
| Nova Scotis............ | 18,351 | 97,273 | 54.5 | 17,460 | 1,070 | 30,264 | 3,458 |
| New Brunswick. | 14,127 | 59,180 | ${ }^{668}$ | 28,033 | $97 \pm$ | 21,547 | 2,172 |
| Quebec. . | 174,426 | 881,488 | 6.189 | 235,568 | 13,346 | 120,917 | 24,879 |
| Ontario.. | 233,609 37,158 | $1,142,295$ 181,558 | 5,454 | 49,402 | 2.510 | 37, 791 | 2,719 |
| Saskatchewan | 29,373 | 152,357 | 31 | 354 | 3,229 | 58,076 | 2,710 |
| Alberta.. | 54,073 | 283,737 | 194 | 5,240 | 735 | 31,543 | 4,019 |
| Britisb Columbia. | 63,547 | 148,321 | 275 | 246.975 | 3,249 | 72,482 | 5,901 |
| Yukon Territory | 988 | 1,069 | 88 | 1,224 | $\pm 13$ | 135 | $\stackrel{55}{68}$ |
| Northwest Territories. | 659 | 820 | 162 | 954 | 66 | 391 | 62 |
| Canada. | 631,762 | 2,540,460 | 14,918 | 1,048,787 | 33,832 | 558,754 | 73,314 |
|  | Private | Branch ange | Erte | nsions | Mobile | Total | Telephones per 100 |
|  | Business | Residential | Business | Residential |  |  |  |
|  | No. | No. | No. | No. | No. | No. | No. |
| Newfoundlsnd......... | 8,598 | - | 6,022 | 6,736 | 50 | 88,038 | 17.6 |
| Prince Edward Island.. | 2,325 | - | 1,477 | 1,805 | - | 26,484 | 24.5 |
| Nova Scotia.......... | 22,554 | 二 | 12,288 | 20,840 |  | 224, 103 | 29.5 |
| New Brunswiek | 251,411 |  | 146, 1888 | 18,587 219.779 | 798 | 173,187 2,054 | 37.7 |
| Ontario. | 377, 157 | 103 | 182,029 | 359,865 | 864 | 2,924,531 | 42.8 |
| Manitoba. | 38,430 | - | 20,118 | 26,804 | 82 | 351,026 | 36.6 |
| Saskatchewan. | 24,144 |  | 15,123 | 18,245 | 168 | 303,810 | 31.9 |
| Alberta. | 79,895 | - | 26,307 | 51,083 | 1,530 | 538.356 | 37.0 |
| British Columbia...... | 84,410 | - | 52,877 | 71,731 | 1,979 | 751,747 | 40.5 |
| Yakon Territory ....... | ${ }_{2} 24$ | - | 1,188 | 182 | 100 | 5.361 | 35.7 |
| Northwest Territories. | 307 | - | 377 | 105 | 43 | 3,946 | 15.2 |
| Canada. | 905.785 | 122 | 476,777 | 709,742 | 5,884 | 7,445,081 | 37.6 |

The major telephone systems record completed calls on representative days throughout the year and on this basis estimate the number of local conversations which, added to the actual count of Iong-distance calls, gives their total volume of business. Estimates are included for the smaller systems.
3.-Local and Long-Distance Calls and Average Calls per Capita and per Telephone, 1956-65

Nots.-Figures from 1928 will be found in the corresponding table of previous Year Books beginning with the 1939 edition.

| Year | Local Calls | Long. Distance Calls | $\begin{aligned} & \text { Total } \\ & \text { Calla } \end{aligned}$ | Total Calls per Capits | Average Calls per Telephone |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Lecal | LongDistance | Total |
|  | '000 | '000 | '000 | No. | No. | No. | No. |
| 1958. | 7,593,525 | 171,280 | 7,764,805 | 486 | 1,688 | 38.0 | 1.726 |
| 1957. | 8, 777, 101 | 178,608 | 8.255,709 | 498 | 1,673 | 37.0 | 1,710 |
| 1958. | 8,513,455 | 194, 186 | 8,707,641 | 511 | 1,663 | 37.9 | 1,701 |
| 1959. | 9+044, 825 | 205,395 | 9,250,220 | 530 | 1,663 | 37.9 | 1,701 |
| 1960. | 9,364,586 | 215,275 | 9,579,861 | 537 | 1,635 | 37.6 | 1,672 |
| 1961. | 10,242,657 | 226,258 | 10,468,815 | 568 | 1,703 | 37.6 | 1,741 |
| 1962. | 10.658,129 | 250,239 | 10,808,368 | 576 | 1,668 | 40.0 | 1,708 |
| 1963. | 11.035,080 | 257.548 | 11,322.578 | 593 | 1,662 | 39.0 | 1,701 |
| 1964. | 11,658, 113 | 281, 239 | 11,939,352 | 614 | 1,661 | 40.1 | 1,701 |
| 1965. | 12,138,243 | 301,614 | 12,438,857 | 628 | 1,630 | 40.5 | 1.671 |

The steady increases in capitalization, revenue and expenditure of telephone companies together with the figures of number of employees and alaries and wages paid are shown for the years 1956-65 in Table 4. Provincial figures for 1965 are given in Table 5.

## 4.-Financial Statisties of Telephone Systems, 1956-65

Nord.-Figures from 1911 are given in the corresponding table of previous Year Books beginning with the 1938 edition.

| Year | Capital <br> Stock ${ }^{\mathbf{l}}$ | Long-Term Debt | Cost of Plant | Revenue | Expenditure | Full. Time Employeen | Salaries and Wages: |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | * | 8 | \$ | No. | \% |
| 1956. | 549,196,657 | 583,795,407 | 1,672,363,570 | 422,370,206 | 366, 117,634 | 60,121 | 193,992,14 |
| 1957. | 627,051, 991 | 683,386, 827 | 1.941,581,700 | 487,701,983 | 412, 158,348 | 64,074 | 219,693,002 |
| 1958. | 638.824.492 | 845,613,559 | 2,202,747.303 | 507,689,602 | 451,672,799 | 61,400 | 234,298, 163 |
| 1959. | 730, 874.613 | 916,797,207 | 2.441. 576,788 | 582, 262,550 | 509,727, 426 | 58, 828 | 240,691,244 |
| 1960. | 758,291,439 | 1,068, 399,476 | 2,602,484,052 | 627,982,847 | 549,042,848 | 57,670 | 247,128,467 |
| 1961. | 879,421,405 | 1,134, 866, 419 | 2,926,527,459 | 679,306,194 | 590, 428, 189 | 56,322 | 254, 207,73 |
| 1962. | 1,012.220,461 | 1,151,169.891 | 3,192,229,994 | 733,294,451 | 636,542,442 | 58,091 | 269, 284,720 |
| 1963 | 1,207,147,639 | 1,144,518,306 | 3,510,479,137 | 787, 374,716 | 687,272,971 | 58,416 | 288,772,585 |
| 1964. | 1,328,991,574 | 1,241.015,012 | 3,808,675.460 | $860.207,384$ | 746, 503,960 | 60,829 | 308, 454, 089 |
| 1965. | 1,380,189,560 | 1,348,911.971 | 4,127,386,680 | 948, 177, 117 | 821, 204,894 | 63,467 | 335,364,967 |

I Includes premium on capital stock.
\& Full-time and part-time.
5.-Financtal Statistics of Telephone Systems, by Province, 1965

| Province or Territory | Capital Stock ${ }^{1}$ | Cost of Plant | Revenue | Expenditure | $\begin{aligned} & \text { Full- } \\ & \text { Time } \\ & \text { Em- } \\ & \text { ployees } \end{aligned}$ | Salaries and Wages ${ }^{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | 8 | No. | \$ |
| Newfoundland | 12,850, 670 | 37,370,145 | 6,043,761 | 5,793.364 | 789 | 3,385,927 |
| Prince Edward Island. | 3,173.047 | 11,514, 623 | 2,336,450 | 2,051,705 | 182 | 637,853 |
| Nova Seotia. | 37.499.713 | 114, 655, 740 | 24,727,334 | 21, 348,609 | 2,312 | 9,168,607 |
| New Brunswick | 39, 804,936 | 109,778,086 | 24,526,668 | 20,974, 401 | 1,681 | 8.054. 238 |
| Quebec ${ }^{\text {² }}$ | 1,045,388,458 | 2,819,734,805 | 627,144,040 | 537,255, 428 | 18,372 | 102,512,760 |
| Ontario | 17,669,467 | 74, 131, 118 | 19,011, 993 | 14, 825, 145 | 20.802 | 111, 651, 180 |
| Manitoba. |  | 198, 123,433 | 35,750,060 | 33.613,230 | 3.779 | 17,818,057 |
| Saskatchewan | 47,423.049 | 202,216,410 | 39,777,217 | 32,886, 708 | 3.146 | 12, 813,221 |
| Alberta. | 3,264,729 | 311,461, 712 | 65,174,673 | 63,218.975 | 8,967 | 32, 166,789 |
| British Columbis...... Northwest Territories | 173.115. 491 | 448, 400.608 | 103, 684, 821 | 89,237,329 | 6,432 5 | $\begin{array}{r} 37,107,337 \\ 48,998 \end{array}$ |
| Canada | 1,38t,189,560 | 4,127,386,68\% | 948,177,117 | 821,204,894 | 63,467 | 335,364,967 |

${ }^{4}$ Includes premium on capital atock.
${ }^{2}$ Full-time and part-time.
${ }^{3}$ Includes data of The Bell Telephone Company, which operates in Quebec, Ontario, Newfoundland and the Northwest Territories. Includes data of Northern Telephone Limited, which operates in Ontario and Quebec.

Telegraph Statistics.-There were nine telegraph and cable companies operating in Canada during 1965 but, as already stated, telegraph service is provided mainly by the telecommunications departments of the two major railway companies (see also p. 861). The number of telegrams sent continues to decline year by year, giving way to other types of message transmission, but the number of cablegrams sent has been rising. The business of telegraph and cable companies appears to be changing from one of handling messages directly to one of leasing equipment for the transmission of messages by others. Revenues from the latter source have been rising over the past several years and have been the main factor in the steady advance in total operating revenues. Total cost of property and equipment for all telegraph and cable companies was $\$ 447,295,000$ in 1965 , increasing from $\$ 425,324,144$ in 1964.

## 6.-Summary Statistics of Canadian Telegraphs, 1958-65

Nont.-Figures from 1920 are given in the corresponding table of previons Year Books beginning with the 1988 edition.

| Year | Opersting Revenues | Operating Expenses | Net Operating Revenue | $\begin{gathered} \text { Pole- } \\ \text { Line } \\ \text { Mileage } \end{gathered}$ | Wire Mileage | Employees 1 | Telegrams | Cablegrams: | Money Transfers |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | miles | miles | No. | No. | No. | 3 |
| 1958. | 40,720,213 | 33,688.888 | 7,031,325 | 48,062 | 442,891 | 10,833 | 20,381,641 | 2,390,376 | 24,295,308 |
| 1957. | 44,796,778 | 39,271,893 | 5,524,885 | 48,379 | 451,669 | 11,159 | 19,163,723 | 2,492,982 | 25,580,057 |
| 1958. | 47,633,991 | 39,908,538 | 7, 725,453 | 47,495 | 464,661 | 10,587 | 17,296,786 | 2,398,459 | 24,434, 887 |
| 1959.... | 52,962,913 | 43,511,666 | 9,451,247 | 47, 535 | 486,875 | 10,586 | 16,390,997 | 2,487,358 | 25,589,067 |
| 1960.... | 58,546,167 | 45,538,063 | 13,008, 104 | 48,159 | 510,640 | 10,279 | 15,546,292 | 2,533,014 | 25, 134,534 |
| 1961. | 84,053,626 | 51,735,006 | 12,318,620 | 48,675 | 524,720 | 9,997 | 15, 138,706 | 2,662,981 | 25,041,156 |
| 1962... | 71,379,074 | 56,451,679 | 14,927,395 | 48,381 | 534,074 | 10,069 | 14,451,416 | 2,608,103 | 28,060, 157 |
| 1963. | 73,611,349 | 60, 256,828 | 13,354, 521 | 49.536 | 532,551 | 9,826 | 13,338,941 | 2,668,796 | 30, 133.340 |
| 1964. | 78,743,332 | 63,865,422 | 14,877,910 | 49,730 | 537, 438 | 9,431 | 12,949,062t | 2,751,623 | 82,378,177 |
| 1965. | 86,087,398 | 68,869,393 | 17,218,005 | 49,623 | 544.759 | 9,270 | 12,788,585 | 3,037,939 | 38,865,118 |

1 Excludes commission operators.
2 Includes wirelesa messages and transatiantic telex messagea.

## Subsection 3.-Overseas Telecommunications Services

The Canadian Overseas Telecommunication Corporation (COTC) was established in 1950 to maintain and operate external telecommunication services for the conduct of public communications by cable, radiotelegraph and radiotelephone and any other means of telecommunication between Canada and overseas points; to make use of all developments in cable and radio transmission and reception for external telecommunication services; and to conduct investigation and research with the object of improving and co-ordinating such telecommunication services with the telecommunication services of other parts of the Commonwealth. By 1966 the following services had been established: direct telegraph, telephone and telex communications between Canada and Argentina, Australia, Barbados, Bermuda, Brazil, Britain, Denmark, Finland, France, Germany, Iceland, Italy, Jamaica, Japan, the Netherlands, New Zealand, Norway, Sweden and Switzerland. Direct telegraph and telex services are operated with BeIgium and Peru and direct telegraph service is operated with the U.S.S.R.

The first transatlantic telephone cable, a joint project with the British Post Office, the American Telephone and Telegraph Company, the Eastern Telephone and Telegraph Company and the Corporation, was brought into service in 1956. Apart from normal use of its systems for public telephone and telegraph message traffic, capacity is available for private leased circuits. International telex service was introduced to Canada the same year and service with 118 countries is available. Since 1961 the following cables have been made available for service: the Canada-Britain 80 -circuit telephone cable (CANTAT); the Canada-Greenland-Iceland 24-circuit cable (ICECAN), primarily intended to meet the North Atlantic communication needs of international civil aviation, and its connecting counterpart between Iceland and Scotland (SCOTICE); a four-party project (Canada-Britain-Australia-New Zealand), part of a Commonwealth round-the-world cable system, consisting of a Canada-New Zealand-Australia 80-circuit telephone cable (COMPAC); and the use of a number of circuits for Canadian purposes in a telephone cable system connecting Jamaica and the United States and in a telephone cable system connecting Bermuda and the United States. Additional circuits are being taken up in the latter system for
extension to Tortola and thence by tropospheric scatter systems to various islands in the eastern Caribbean and these will be operational toward the end of 1966. A six-party (Canada-Britain-Australia-New Zealand-Singapore-Federation of Malaysia) project, a section of the Commonwealth round-the-world cable system, will provide, when completed early in 1967, an Australia-New Guinea-North Borneo-Singapore-Malaysia-Hong Kong 80 -circuit telephone cable (SEACOM) and will connect with COMPAC.

COTC, under a long-term agreement, has chartered the CCGS John Cabot, a combined ice-breaker/cable repair ship, provided for these purposes by the Department of Transport. The ship is to be mainly responsible for the maintenance of all the cables in the western North Atlantic Ocean.

Canada, along with 50 other countries, is a member of the International Telecommunications Satellite Consortium (INTELSAT). This organization is responsible for financing, setting up and operating a global satellite communication system. The COTC is Canada's designated operating entity for this purpose and is represented on the $18-\mathrm{mem}-$ ber Interim Communications Satellite Committee (ICSC) which is responsible, on behalf of INTELSAT, for carrying this venture forward. A communications satellite ground station is being constructed near Liverpool, N.S., by the Department of Transport for experimental purposes. It is designed to improve the capability of industry and government in this new field and will be made available to the COTC for its initial direct participation in the commercial satellite system. Exploitation of this new technology, along with continued use of existing submarine cables and other facilities, will make possible an improved global network to meet the ever-increasing demand for overseas communication services, including television relay. A list of the cables landed in Canada is given in Table 7.

## 7.-External Cables Landed In Canada, 19c6

| Company and Station | Cables | Nsutical Miles |
| :---: | :---: | :---: |
|  | No. | No. |
| Canadian Oserseas Telecommumication Corporation (COTC)- | 1 | 3078 |
|  | 1 | 8,232 |
| Sydney Mines. N.S. via Clarenville, Nfld. to Oban, Scotiand ${ }^{\text {a }}$....... | 1 | 2, 280 |
| Hampden, NAd, to Oban, Scotland (CANTAT) ............... | 1 | 2,050 |
| Hampden. Ned. to Vestmannaeyjar, Iceland ria Greenland. | 1 | 1,657 |
| Western Union International Inc. (WUI)- |  |  |
| Bay Roberts, Nfld to Penzance, England. | 4 | 8,479 |
| Bay Roberts, Nfld to Hammil, N. Y., U.S.A. | 2 | 2,778 |
| Bay Roberts. N日d. to Azores................... |  | 1,343 |
|  |  |  |
| Sydney Mines, N.S. via Clarenville, Nfld. to Oban, Scotland ${ }^{1}$.. . Sydney Mides, N.S. via Clarenville, Nfld. to Penmarch. France. | 1 | $2,280$ |
| Sydney Mines, N.S. via Clarenville, Nfld, to Penmarch, France. | 2 | $2,400$ |
| New Brunswict Telephone Company Limlted (NBTEL)Campobello Island. N.B. to Lubec, Me., U.S.A................. | 1 | 0.3 |

[^277]

The satellite tracking station at Mill Village on Nova Scotia's south shore is Canada's first link with the global satellite communications network now being established. The rubberized dacron radome protects the giant parabolic reflector antenna which is capable of rotation to any position required to keep orbital satellites within range at all times.

## Subsection 4.-Federal Government Civil Telecommunications and Electronics Services

Radio regulation and radio aids to navigation services are under the jurisdiction of the Telecommunications and Electronics Branch of the Department of Transport. The functions and responsibilities of the Branch may be summarized as follows: (1) administration of the Radio Act and Regulations and the Radio Provisions of the Canada Shipping Act and Ship Station Radio Regulations; (2) research into and development of new and improved communication and electronic equipment and systems needed for aeronautical, marine, meteorological and other services; (3) construction, maintenance and operation of radio aids to marine and air navigation and of radio communication stations including procurement of the necessary equipment; (4) development of policy and plans with respect to international telecommunications by cables, satellites and other media including relations with the Canadian Overseas Telecommunication Corporation; (5) co-ordination of policy governing government use of telecommunication services; (6) administration of the leasing of land-line facilities required for all services of the Department; (7) planning of emergency measures and administration of the Emergency National Telecommunication Organization (ENTO); (8) administration of the Telegraphs Act and the Regulations thereunder covering the licensing of overseas submarine cables; (9) participation in the work of the International Telecommunication Union and its subsidiary organs; and (10) participation in the communication and electronic activities of the International Civil Aviation Organization (ICAO), the International Air Transport Association (IATA) and the International Marine Consultative Committee (IMCO).

Licensing and Regulation of Radio Stations.-Under the Radio Act and the Canada Shipping Act it is provided that radio stations employing a form of Hertzian wave transmission, including television and radar, be licensed by the Department of Transport, unless otherwise exempted by regulation. Licensing, which provides basic control over the right to establish a radio station, involves the assigning of specific frequencies to each station. Frequencies are assigned to many types of services on a shared non-interference basis. Engineering briefs covering the selection or change of frequency, amount of power and design of the directional antenua system must be approved by the Department of Transport and, before a new broadcasting station can be licensed or before modifications can be made to an existing station, notification is sent to the signatory countries of the North American Regional Broadcasting Agreement, in the case of AM broadcasting stations, and to the United States under the Canada-USA Television Agreement and the Canada-USA FM Agreement, for television and FM broadcasting stations, respectively. The setting of standards for the equipment, installation and operation of a station providea control for efficient use of the radio spectrum. A further control is the requirement that operating personnel be subject to examination and certification.

From time to time the Department of Transport eatablishes standards governing the technical suitability of radio equipment for licensing in Canada and Radio Standards Specifications and Procedures are issued by the Telecommunications and Electronics Branch in co-ordination with representatives of industry. Before a licence may be issued the radio equipment must comply with the technical requirements of the applicable Radio Standards Specification and be type-approved or declared technically acceptable. Type-approval and technical acceptability briefs may be prepared and submitted by a communications consulting engineer or the necessary tests may be conducted, for a fee, at the Department of Transport Radio Regulations Engineering Laboratory, Ottawa. Over 1,400 units were type-approved or declared technically acceptable during the year ended Mar. 31, 1966.

Ejght fixed and one mobile monitoring stations are maintained at suitable points across Canada to observe actual radio spectrum conditions using a variety of modern electronic aids, their purpose being to ensure that radio communications are conducted according to regulatory procedures and to determine causes of harmful interference.

Under the Safety of Life at Sea Convention and the Canada Shipping Act, most passenger ships and larger cargo ships must be fitted with radiotelegraph or radiotelephone equipment, primarily for distress use. Approval is given for each make and model of equipment that meets the required standard and, in addition, the ship station as a whole is inspected after the licence is issued and periodically thereafter. All Canadian and foreign ships are subject to inspection to ensure that they conform to the requirements of the Safety of Life at Sea Convention.

Standards have been developed for the installation of aircraft radio atations specifying the techniques and materials that may be used, and inspections of radio stations aboard civil aircraft of all operational categories are carried out at prescribed periods. In-flight inspections of the radio communications and navigational aspects of proposed new air carrier operations, encompassing both Iand and oceanic routes, are also made as required.

Marine and aeronautical radio operator standards and related regulations are covered by international agreement. The International Telecommunication Convention prescribes the qualifications for radio operators on mobile radio stations and the regulations made under the Radio Act provide for the examination and certification of operators, both professional and amateur.

Number of Radio Stations Licensed in Canada.-The number of licences in force for radio stations in Canada during the year ended Mar. 31, 1966 was 162,840 compared with 136,912 in 1964-65. These figures include stations operated by departments of federal,
provincial and municipal governments, stations on ships and aircraft registered in Canada and mobile stations operating in public and private land mobile services, but do not include private commercial broadcasting licences.

|  |  | ted- |
| :---: | :---: | :---: |
| Item | Mar. 31,1965 | Mar. 31, 1966 |
|  | No. | No. |
| New applications received. | 21,141 | 23,826 |
| Authorizations granted. | 20,930 | 23,703 |
| Licences cancelled. | 7,195 | 8,057 |
| Licences renewed. | 89,507 | 102,586 |
| Amateur licences in force. | 11,293 | 11,693 |
| General radio service licences in torce (issued). | 36,112 | 41,584 |
| General radio service licences insued during year (new or renewed) | 11.714 | 19,001 |
| Total licences in force. | 136,912 | 162,840 |
| Licence amendments. | 15,575 | 14,487 |
| Certificates of Registration issued to U.S. licensees. | 1,202 | 2,322 |
| Net increase of licences in force over preceding year............. | 18,558 | 25,928 |

1 General radio service licences are valid for a three-year period.
Investigation and Suppression of Inductive Interference.-The Radio Act provides penalties for selling or using apparatus liable to cause interference to radio reception. Standards are developed and type approvals issued for certain elasses of such equipment. The Telecommunications and Electronics Branch of the Department of Transport also provides a country-wide interference service using special investigation equipment for the purpose of tracing sources of interference and recommending cures for interference to broadcast, television and other radio reception. Seventy-five cars equipped for measuring and locating sources of interference operate from offices located in 30 cities throughout Canada; 17,598 cases were dealt with during the year ended Mar. 31, 1966.

Regulations specifying the limits to be met by particular types of apparatus are contained in the Radio Noise Limits Order and Radio Noise Limits Order Amended. This amendment, introduced on Sept. 24, 1964, designated the limits for noise from television receivers manufactured in Canada or imported into Canada on or after Apr. 1, 1966. Certain low-powered radio transmitting and receiving equipment is exempt from the operation of the Radio Act, e.g., garage door radio controls for a number of models have been exempted and consequently may be operated without the radio station licence otherwise required.

Meteorological Communications.-Weather stations operated by the Meteorological Branch of the federal Department of Transport throughout Canada are linked coast-to-coast by means of teletype and, in the remote northern areas, by radio or radioteletype. The land-line teletype circuits are leased from commercial companies and the radio circuits are operated chiefly by the Telecommunications and Electronics Branch of the Department of Transport.

Weather stations on the teletype network transmit their reports directly; other stations report via commercial telegraph or radio facilities to the nearest station on the teletype line for subsequent transmission on the meteorological circuit. The reports are collected on a regional basis and then relayed to other parts of the country as required. There are two coast-to-coast teletype systems transmitting weather information, with main relay points at Vancouver, Edmonton, Winnipeg, Toronto, Montreal, Halifax, Gander and Goose Bay. These centres handle the distribution of weather information within Canada, including the Arctic, and also effect international exchange with the United States and Europe and, through them, with many other countries. For the latter purpose, the Canadian Meteorological Branch and the British Meteorological Office share the cost of a leased duplex circuit in the transatlantic cable. Altogether, the Meteorological Branch uses 59,700 miles of teletype circuits, connecting 392 teletype offices.

In addition, a facsimile network connects weather offices and includes radio facsimile transmission to Arctic stations and ships at sea. Weather charts originating at the Central Analysis Office and the High Level Forecast Office in Montreal receive national distribution over the network. Charts prepared at the various Weather Central Offices across Canada are transmitted regionally. Altogether, the Meteorological Branch utilizes 13,700 miles of facsimile circuits, serving 86 offices.

Radio Aids to Marine and Aeronautical Navigation.-Services of the Telecommunications and Electronics Branch of the Department of Transport in aid of marine and aeronautical navigation are outlined in the following paragraphs; details may be obtained on request from the Department of Transport, Ottawa.

Marine Navigation.-Radio aids to marine navigation are provided for radio-equipped Canadian vessels and foreign ships using Canadian waters. This safety and communications service for shipping covers the East and West Coasts, the Great Lakes, the St. Lawrence River and Gulf, Hudson Bay and Hudson Strait and includes regularly broadcast weather reports, storm warnings and notices of dangers to navigation. Ships at sea may obtain medical advice from any coast station. The stations carry out communications by radiotelegraph and/or radiotelephone and most of them provide connections to land telephone lines. Halifax (VCS) and Vancouver (VAI) stations provide a long-range radiotelephone service to ships. Halifax (VCS) and Vancouver (CKN) have radiotelegraph facilities for world-wide communications and participate in the Commonwealth long-range ship communications scheme. Coast stations on Hudson Bay and Hudson Strait, in addition to their regular services, provide commercial communications for posts of the Hudson's Bay Company and various prospecting and development organizations, make weather observations, handle administrative traffic and assist aircraft with information, landing conditions, etc.

Automatic radiobeacon stations are maintained on the East and West Coasts, the St. Lawrence River and Gulf, the Great Lakes and Hudson Bay and Strait, giving navigational aid to mariners by transmitting signals on which bearings may be taken. These stations are arranged, where possible, in groups up to a maximum of six stations transmitting in sequence on a common frequency, the sequence being repeated continually regardless of weather conditions.

Loran is a long-range radio aid to marine and air navigation providing accurate fixes at distances up to 750 miles by day and 1,500 miles by night. Two Loran stations operate in Nova Scotia, three in Newfoundland and one on the West Coast. These stations, in conjunction with Loran stations of the United States Coast Guard, give service to ships and aircraft plying the North Atlantic and Pacific Oceans. Decca is a short-range radio aid to navigation providing accurate fixes at distances up to 250 miles. Four chains of Decea stations are in operation-the Newfoundland chain, the Nova Scotia chain, the Anticosti chain and the Cabot Strait chain-giving service to ships off Newfoundland and Nova Scotia and in the St. Lawrence River and Gulf.

It has become general practice to equip merchant ships with radar and important buoys are fitted with radar reflectors to increase their radar visibility. Two shore-based radar installations are in operation-one at Camperdown near the mouth of Halifax Harbour and the other on the Lion's Gate Bridge across the entrance to Vancouver Harbour. Low-powered transceivere are provided for use in emergencies at lighthouses, particularly at locations that would otherwise be completely cut off from assistance in case of illness.

Aeronautical Navigation.*-Radio aids to air navigation are provided from coast to coast and from the Canada-United States border to the Arctic along and off the airways, and are used by Canadian and foreign air carriers flying over Canadian territory. Six regional offices located at Vancouver, B.C., Edmonton, Alta., Winnipeg, Man., Toronto,

[^278]Ont., Montreal, Que., and Moncton, N.B., carry out the construction and operation of facilities. Low-frequency radio range stations, located approximately every hundred miles along airways, provide specific track guidance to pilots by means of audible signals which may also be used to obtain direction finding bearings. In addition, radiotelephone communications are available between ground and aircraft, by which means pilots may obtain weather data, air traffic control instructions and other information concerning the safety of fights. Forty-eight very high frequency omni-directional ranges (VOR) are in operation, a type of facility that enables the pilot to select any desired course. These omni-directional ranges have permitted the establishment of VOR airways across Canada and on a number of trans-border routes in co-operation with the United States. Additional installations are under construction.

Aeronautical radiobeacon stations provide radio signals with which pilots may use their direction finding equipment to obtain relative directional bearings. Fan markers operating on very high frequencies are usually placed on an airway to inform the pilot when he may safely lose altitude or to indicate accurately the distance from an airport. Station location markers, similar to fan markers, are installed at most radio range sites; they enable a pilot to determine when he is exactly over the station.

Airport and airway surveillance radars ( 150 nautical-mile) are in operation at 16 airports for air traffic control purposes. Precision approach radars are in operation at seven major airports. Instrurnent landing systems (ILS) provide radio signals which permit pilots to approach airports for landing during periods of very low visibility. An installation normally consists of a localizer transmitter providing lateral guidance to the runway, a glide path transmitter for slope guidance to the approach end of the runway, two marker transmitters giving distance indications from the runway and a low-power radiobeacon (compass locator) to assist in holding procedures and lining up on the localizer course. Forty-five instrument landing systems are in operation.

Aeronautical radio communications stations are located at strategic points across the country, including the Arctic. These stations, operating for the most part on high frequencies, provide communication with domestic and international air carriers. Thirteen international communications stations, giving coverage from coast to coast and over the oceans, form a major contribution on the part of Canada to international aviation.

## Subsection 5.-Public and Private Commercial Microwave Facilities

Canada, because of its population distribution and the vast areas served by microwave communication links, ranks second highest among the world's users of microwave communications systems on a per capita /per mile basis. Increasing demand for television outlets necessitated the extension of microwave routes to provide interconnections for the CBC English, French and private networks and recently these routes have been upgraded to enable the transmission of colour television which started in the autumn of 1966. With the use of more automated equipment by industry and various services, associated data and control information must be transmitted at rapid speeds over microwave radio-relay to widespread areas throughout the country. This Subsection gives a summary of the facilities existing or under construction at the end of March 1966.

Railways.-The Telecommunications Departments of the Canadian National and Canadian Pacific Railway Companies have placed in operation a microwave system extending from Montreal to the Pacific Coast, which is used for television, telephone and data relay purposes. They also operate microwave facilities linking the Province of Quebec with the Maritime Provinces and Newfoundland and a major expansion of microwave facilities in Newfoundland has been undertaken by Canadian National Telecommunications (CNT). In addition, CNT has installed a microwave system between Alberta and the Yukon Territory which carries telephone and data traffic and serves both civil and
military organizations in the area. In co-operation with Alberta Government Telephones, a combination microwave and tropospheric scatter system connects Alberta and the Northwest Territories. This system is also intended to provide communication for civil and military use in the Far North. The Quebec North Shore Labrador Railways has developed a microwave system extending into northern Quebec to provide communication for mining operations and to serve some civil communication purposes. Ontario Northland Railways operates a microwave installation connecting northern Ontario and James Bay, also for purposes of military and civil communication. The Pacific and Great Eastern Railway makes extensive use of $6,000 \mathrm{Mc} / 8$ microwave facilities linking Vancouver with Prince George and Dawson Creek, B.C.

Telephones.-The Trans-Canada Telephone System consists of eight provincial and private systems collectively providing a transcontinental microwave system for the purpose of carrying telephone, television, data and other types of communication services. Extensive microwave systems are utilized within the respective provinces for civil and military communications or television relay purposes. Major expansion has taken place in each province, greatly increasing the number of areas served and system capacity for all types of communication requirements. Tropospheric scatter systems are employed to provide beyond line-of-sight transmissions especially to the Far North areas; these are used for both civil and military applications.

Recently the telephone companies of the three Prairie Provinces announced plans for construction of a major microwave system extending from Winnipeg to Edmonton, to form part of a projected second transcontinental microwave system operated by the telephone companies. The B.C. Telephone Company has installed a major trunk system from Prince Rupert to Prince George which is linked through Prince George with the transcontinental system in the southern part of the province. A microwave system has been built linking Mill Village communication satellite earth station, constructed near Liverpool, N.S. (see p. 875), with the trunk route system of Maritime Telegraph and Telephone Company.

Television.-The two main television interests in Canada-the CBC and the CTV Television Network Limited-lease private microwave facilities for the relay of television programs from coast to coast. In addition, studio transmitter links are used by various television stations where the television transmitter is situated some distance from the studio and interconnection is required. In sparsely populated areas, off-the-air pick-up signals from primary television stations are sometimes relayed via microwave to rebroadcasting sites. Microwave facilities are also used in connection with portable and mobile television pick-up where program material is intended for the main studio. Recently, both network facilities and local studio transmitter links have been up-graded to enable the transmission of colour television.

Industrial.-Although many firms utilize public communication facilities on a lease basis, some organizations have installed private microwave systems to provide voice, teletype and control data for various purposes. The British Columbia Hydro and Power Authority, the Calgary Power Corporation, The Hydro-Electric Power Commission of Ontario, the Quebec Hydro-Electric Commission and Manitoba Hydro use a considerable number of microwave relay systems for important control and communication purposes. For example, Hydro-Quebec has recently greatly expanded its hydro power-generating capacity and new microwave routes have been added to permit a central control of the various generating stations. The British Columbia Hydro and Power Authority is installing facilities to link the Vancouver area with Peace River, Mica Creek and the Bonneville Power Administration, and also for system control in the Vancouver area.

## Subsection 6.-Miscellaneous Radio Communication Services

In addition to radio communication services provided by the Federal Government, extensive radio communication systems have been established in the provinces, mainly for police, highway and forestry protection purposes. Municipal government departments have steadily increased their use of radio to facilitate operations, particularly as a medium of communication with vehicles-police, fre, engineering, hydro, etc. Such services as taxi, heavy construction, ready-mix concrete, oil pipeline construction and operation, veterinarian and rural medical also make extensive use of radio for communication purposes.

Public utilities, power companies, provincial power commissions, oil exploration and mineral development organizations have expanded considerably their use of radio in both mobile and point-to-point radio fielda.

The telephone companies provide an extension of land telephone service, by radio, to suitably equipped vehicles. This service is available in all major cities in Canada and along many of the nation's arterial highways. Restricted common-carrier mobile radio service (this service to vehicles does not permit interconnection with the over-all telephone system but only with specific dispatchers) is available in most major cities in Canada as well as in a number of smaller urban centres. The latter service is provided by telephone companies as well as by other organizations. Low-power radio stations may be licensed to permit short-distance personal and private business radiotelephone communications; more than 41,000 licences were in force on Mar. 31, 1966.

## Subsection 7.-Radio and Television Broadcasting*

Broadcasting in Canada has developed over a period of some forty-seven years as a combination of public and private enterprise. Since the opening program from the first radio station was beamed into a few Montreal homes in 1918, the role of the radio and television program in the daily life of the Canadian family has grown to startling prominence. Today, radio service reaches 98 p.c. and television service over 92 p.c. of the Canadian population.

To have become such an integral force in the daily life of the nation, broadcasting had to learn the needs of the people and how to serve them. Two 'official' languages forming two distinct cultures had to be served independently but without diminishing the concept of national unity. Dozens of other smaller groups, distinct in culture and frequently dwelling in the same radio or TV coverage area but in separate communities with widely divergent program interests, had to be served. Physical problems of distance and geography had to be overcome. It requires some 360 radio transmitters and 221 TV stations and satellites to reach a population distributed across a 4,000 -mile southern frontier, through seven time zones and a variety of topographical and climatic regions, and scattered northwest through thousands of square miles to the shores of the Arctic Ocean. Not only do these people have local service that is a reflection of life in their own districts, but by means of 15,000 miles of land-lines for radio networks and 8,500 miles of microwave circuits for television nearly every Canadian may, at the same time, listen or watch as an event of national interest takes place.

Since 1932, a publicly owned body, now known as the Canadian Broadcasting Corporation, created to develop a national service, has worked with the private or independent station-owner to establish this service. A more recent addition (1958) is the Board of Broadcast Governors, which consists of three full-time members including the chairman and vice-chairman and 12 part-time members; the function of the Board is to "regulate the establishment and operation of networks of broadcasting stations, the activities of public and private broadcasting stations in Canada and the relationship between them, and provide for the final determination of all matters and questions in relation thereto" (See

[^279]also pp. 869-870.) The Canadian Broadcasting Corporation consists of a president and a vice-president and nine other directors appointed by the Governor in Council. It is accountable to Parliament through a Cabinet Minister designated by the Governor in Council and is empowered to establish and maintain program networks and stations. (See also pp. 882-886.)

The Broadeasting Act also requires that, before dealing with any application for a licence to establish a broadcasting station (private or public) or for an increase in power, change of frequency or change of location of a broadcasting station, the Minister of Transport must receive a recommendation from the Board of Broadcast Governors. The same requirement exists with respect to the making of a new regulation or changes in the Regulations under the Radio Act which affect broadcasting stations. Before making an appropriate recommendation to the Minister of Transport, the Board considers all such applications at a public hearing at which the applicant, licensees and the Canadian Broadcasting Corporation are given the opportunity of being heard.

Under the provisions of the General Radio Regulations, Part II, made under the Radio Act, the Minister of Transport must also receive a recommendation from the Board before dealing with any application to change the ownership or control of any share of capital stock in the licensee of a broadcasting station which is incorporated as a private company. The Board of Broadcast Governors has established a policy that any such application which would result in a change of ownership or control of a licensee would be referred to a public hearing before a recommendation is made to the Minister. Applications of this kind not involving a change of ownership or control may be dealt with by the Board or the Executive Committee of the Board at a regular meeting.

Under the provisions of the Broadcasting Act, the Board has issued the Radio (AM) Broadcasling Regulations, the Radio (TV) Broadcasting Regulations and the Radio (FM) Broadcasting Regulations.

Broadcasting Facilities.-As of Apr. 1, 1966, the CBC had 31 AM broadcasting stations, six FM broadcasting stations, 16 shortwave broadcasting stations, 49 TV broadcasting stations (including satellites) and 141 low-power relay transmitters in operation. On the same date, private companies owned and operated 243 AM broadcasting stations, 59 FM broadcasting stations, six shortwave broadcasting stations and 204 TV broadcasting stations (including satellites). All but 15 of the privately owned television stations and many of the privately owned radio stations are affiliated with the CBC and help to distribute national radio and television services over networks operated by the CBC. Of the 15 unaffiliated private television stations, 11 form The CTV Television Network Limited which commenced operating in the fall of 1961; the other stations, located in Quebec City, Chicoutimi, Hamilton and Montreal, are independent of network affiliation.

Of particular significance for all broadcasters, public and private alike, is the growth in community antenna television systems. These systems, in which the TV receivers of fee-paying subscribers are linked to a common receiving and re-transmission system, make television available to people who could not otherwise receive it and thus, in effect, extend the coverage of existing television stations. The growth of both these systems can have substantial and as yet largely unmeasured effects on television broadcasting itself.

## Operations of the Canadian Broadcasting Corporation, 1965-66

Television.-The extension and improvement of the national television service is of continuing concern to the CBC. As of Mar. 31, 1966, about 60 p.c. of the estimated $15,800,000$ Canadians who speak English only or are bilingual receive the complete Englishlanguage television service through CBC stations; another 33 p.c. receive partial service from privately owned stations of the CBC English television network. There are an estimated $6,230,000$ Canadians who speak French only or are bilingual. Complete television service in the French language is available to 64 p.c. through CBC stations and private affiliates provide partial service to an additional 25 p.e.

Much of the population still to be served is in small, scattered communities; approximately 72 of the 2,000 or more areas are outside the national service coverage. To bring television service to these small communities will be both difficult and costly. The Corporation continuously reviews the possibility of establishing adequate service to them and the priority list changes as circumstances change. The main factor in establishing priorities is the per capita cost, other factors being language and geographic locations, particularly the degree of isolation. The Corporation's long-range plan is to provide, as far as practicable, complete CBC national network programming, both television and radio, to all parts of Canada; the immediate goal is to fill in the gaps not now covered by CBC or affiliated stations.

Because of the rapid expansion of television over the past 13 years, CBC facilities in the large centres are dispersed throughout each. To improve efficiency, the Corporation has planned consolidation of facilities in Montreal and Toronto and studies have been made for consolidation at Vancouver, Halifax, Ottawa and Winnipeg, as funds become available. During 1965-66, a new television affiliate at Churchill, Man., was completed. In addition, two new bilingual television stations owned and operated by the Iron Ore Company of Canada were licensed in Labrador City, Nid., and Schefferville, Que., on condition that they take only CBC programming. This may well establish a new pattern of publicprivate partnership in bringing television to more remote communities. The CBC also experimented with a simplified TV station package for use in the more remote areas where it is not economical to extend service by normal means; this package, using a low-power transmitter, programmed by videotape alone and operated by one man, would provide service for four or five hours in the evening. English TV network relay stations and rebroadcasting stations commenced service at Deer Lake, Port Rexton, Marystown and Placentia in Newfoundland and at High Prairie in Alberta. CBC affiliate TV network relay and rebroadcasting stations commenced at Murdochville, Mont Blanc, Grande Vallée, Outardes, l'Ance-a-Valleau and Malartic in Quebec; Haliburton, Bancroft and Hearst in Ontario; Meadow Lake in Saskatchewan; and at Hudson Hope, Bullhead Mountain, Bralorne, Cherryville, Hixon, Quesnel, Nass Camp, Juskatla, Port Alice, Camp Woss and Nimpkish in British Columbia.

The establishment of production facilities and associated transmitters has a twofold purpose-through CBC-owned transmitting facilities, the complete national service is made available to the audience and, through the production facilities, the Corporation is able to tap the program resources of the area and thus eventually reflect the area to the remainder of Canada. This enables the CBC to carry out one of its essential functions-that of showing the parts of Canada to each other or, in other words, of reflecting the country to itself.

Radio.-The current demand on CBC radio broadcasting is twofold-first, there is the need to bring service to the small percentage of the population now beyond the reach of Canadian radio and, secondly, the need to increase the amount of national service programming distributed by the national radio networks. As of Mar. 31, 1966, about 98 p.c. of the estimated $15,800,000$ Canadians who speak English only or are bilingual receive the Englist-language radio service through CBC stations and private affiliates. Of the estimated $6,230,000$ Canadians who speak French only or are bilingual, complete radio service in the French language is available to $5,880,000$ or 94 p.c. At present, some 90 areas with a population of 500 or more do not receive adequate CBC national radio network service. During the year ended Mar. 31, 1966, the national radio service was extended through privately owned affiliated stations to Schefferville and Sept Iles in Quebec, Wawa in Ontario, and Duncan in British Columbia.

In radio, an important service is performed by low-power relay transmitters (LPRTs) in the more remote areas of Canada. These are small, unmanned radio transmitters developed by CBC engineers to relay radio network service to listeners where reception is inadequate or non-existent and installation of a manned station is impractical. They broadeast on the standard AM band to small audiences at a low per capita cost. There were 129 LPRTs in operation in 1965-66 and 11 new ones, connected to the English radio network, extended radio service to new areas during the year; the latter are located at Sable River and Larry's River in Nova Scotia, Sept Iles, Port Cartier, Schefferville and Gagnon in Quebec, Kapuskasing and Vermilion Bay in Ontario, Christina Lake and Squamish in British Columbia, and at Fort Simpson in the Northwest Territories. With the extension of separate French and English radio network feeds to Schefferville, the LPRTs at Labrador City and Wabush which previously broadcast bilingual service were connected full time to the French and English radio networks respectively.

The CBC began FM broadcasting in 1947 with stations in Ottawa, Toronto and Montreal, followed in 1948 with a station in Vancouver and a French-language FM station in Montreal. The CBC now has English-language FM stations in Ottawa, Montreal and Toronto-forming a network-plus Vancouver and Winnipeg, serviced by high fidelity tape and disk exchange. In Montreal, where the CBC has two FM stations, the second offers a local service in French. Application has been made to establish and operate a French-language FM station in Vancouver. The CBC FM service emphasizes music but also includes a wide variety of apoken-word material.

Northern Service--Since 1958, the Northern Service has broadcast by shortwave and medium-wave, in two Eskimo dialects and five Indian languages as well as in French and English, to about 75,000 people scattered over approximately $2,000,000$ sq. miles. About 75 p.c. of the population is served by the medium-wave community stations which are located at Whitehorse, Y.T., the program centre for the LPRTs of the Yukon network, and Yellowknife, N.W.T., the program centre for the LPRTs of the Mackenzie network. All the radio stations of the Northern Service are connected with CBC national networks "outside" except those at Inuvik, Churchill and Frobisher Bay which receive national service programs on tape and news by shortwave or medium-wave.

The need for a program service to the Far North in French, English and Eskimo was met by eight and a half hours of shortwave broadcasts daily. News and messages on Arctic Patrol began in the Eastern Arctic for the men on the ice-breakera and supply ships. Northern Messenger, CBC's most enduring program, was extended to the full year instead of its former winter season.

The Northern Service is concentrating on improving and extending its programs for Indian, Eskimo and métis listeners who are now beginning to share the economic and educational opportunities available to most Canadians. Radio is an ideal means of communication among people lacking a written culture. The Service has made increasing use of Eskimo and Indian languages in local programming to feature reports, discussions and talks on such topics as housing, health, education and employment as well as community news, messages, traditional folklore and music; for instance, broadcasts in Eskimo at Frobisher Bay increased in the past year from one and a half to twenty hours weekly. The Service also broadcasts the weekly Indian Magazine in English, for and about Indian people throughout Canada, co-operating with the National Indian Council, the IndianEskimo Association, Indian Friendship Centres in cities across Canada, and federal and provincial government departments dealing with Indian affairs. Churchill Calling and Frobisher Calling are personal radio message services for Eskimos hospitalized in Southern Canada, for Eskimos attending vocational and aeademic schools and living in hostels and private residences, and northerners of Indian and métis backgrounds.

In the Mackenzie Delta, the Northern Service co-operated with the Indian-Eskimo Association to start a community development program adapting the format of the National Farm Radio Forum. The views of the Delta communities on matters of interest and concern to their members are broadcast in Eskimo, Loucheux and English by radio
station CHAK. These people have little or no means of communicating with each other on matters of common interest or of speaking as a group to other parts of Canada. Radio will help remedy this and if the Community Action Program succeeds in the Delta it will be started in other places in the North.

Armed Forces Services.-In 1965-66, the Armed Forces Services continued to provide Canadian servicemen and their dependants stationed abroad with shortwave news, live network coverage of outstanding national events, tape-recorded network shows, television films for showing in recreation centres and mess halls, and concert parties of outstanding Canadian variety artists. About 84 hours of programs weekly, recorded from the French and English radio networks, were supplied to the Army and Air Force radio stations in Europe, plus two and a half hours of news, sports and topical programming daily by shortwave. The Armed Forces Services arranged network connections from Canada for Christmas and for the Federal Elections, the Grey Cup and Stanley Cup games. The Service also provides a package of about five hours a week on film and kinescope of CBCTV programs, including hockey and football games, to the Department of National Defence for distribution to remote northern bases such as that at Alert on Ellesmere Island, just 400 miles from the North Pole.

To mark radio station Canadian Army Europe's 10th Anniversary, the CBC produced special programs for broadeast on its networks and the Armed Forces stations overseas. CBC concert parties toured military bases in Canada, Cyprus and the Middle East, resulting in programs for broadcast by the networks as well as entertainment for the troops.

Royal Canadian Navy ships at sea 'broadcast' CBC radio programs over their publicaddress systems. These are supplied in tape-recorded form by the Armed Forces Service in quantity to the headquarters of the Navy's Atlantic and Pacific commands. Continuing 'banks' of non-topical programs are maintained at the Halifax and Esquimalt Naval Dockyards. As each ship leaves on cruise it draws a supply of CBC programs from the bank which is constantly replenished with new programs.

International Service.--In 1965-66 the International Service broadcast in all languages to Europe, Africa, Latin America, the Caribbean, North America, Australia, New Zealand and the South Pacific. The popularity of shortwave listening was measured by the letters and cards received from all over the world by the 3,000 members of the RadioCanada shortwave club who exchange technical information and who include an increasing number of members in Eastern Europe, and by the 150,000 listeners around the world who get Program Schedules on a regular mailing list four times a year. This success comes despite outdated equipment at the transmitting plant in Sackville, N.B., which has been in use for 21 years and the limitations of which now force the renting of transmitters in Britain for broadcasts to Eastern Europe and Africa. Spoken-word transcriptions in English, French, Spanish and Portuguese, including some on Canadian history that will be published for the Centennial, were very popular. Transcriptions in other languages were also produced; for instance, stations and networks in Germany, Switzerland and Austria used 376 recorded program items in German.

In television, the 15 -minute multi-lingual Canada Magazine continued and work started on Expo Minus One in colour, showing the influence of Expo 67 on Montreal and its environs. The Canadian Centennial and Expo 67 formed the basis of hundreds of broadcast items. In addition, Expo programs in languages not usually inciuded in the Service covered such ceremonies as sod-turning on the sites of the national pavilions of the countries concerned. Regular broadcast programs frequently dealt with international events taking place in Canada, such as the Conference of the Inter-Parliamentary Union in Ottawa and the International Piano Festival in Montreal.

The transcription service marked the 21st anniversary of the International Service in 1966 with the announcement of a Centennial project produced jointly with RCA Victor. This anthology of music by composers and musicians from all parts of Canada was recorded during the year by the International Service for commercial release.

International Relations.-The CBC in 1965-66 continued activity in the field of international exchange and export sales of programs. Export sales, although not a major activity because the CBC's main job is broadcasting, have been very successful as have international exchanges. Variety, music, drama, children's, educational and public affairs programs have been sold in many markets, including Britain, Ireland, the United States, Australia, New Zealand, Hungary, Egypt, Italy, Scandinavia, Germany and Malaysia.

Intertel, of which CBC is a founding member, continued production of hour-long documentaries for a world-wide audience of between $40,000,000$ and $50,000,000$ viewers. Since the founding of the Federation, the CBC has telecast a total of 28 Intertel documentaries.

CBC personnel seconded from their positions in Canada have continued to assist in the development of television and radio broadcasting service in the newly emerging nations of Asia, Africa and the West Indies. Technical and executive staff have been made available to these countries to assess their requirements and advise on the eatablishment of broadcast service. Much of this work has been undertaken in co-operation with the External Aid Office of the Canadian Government. Trainees have come from Norway, Greece, Pakistan, France, Indonesia, Japan, Burma, Colombia, Sarawak, Morocco, Malaya, Turkey, the West Indies and many other countries for on-the-job training at CBC production points across Canada in various functions applicable to broadcasting-news service, farm and school broadcasts, press relations, financial operations, administration, technical and programming matters, production, audience research and station management.

At the invitation of the Canadian Corporation for the 1967 World Exhibition, Montreal, the Canadian Broadcasting Corporation is constructing, and will staff and operate, an International Broadcasting Centre at Expo 67. Funds for the Centre come from a special Federal Government allocation. The building will include a large and a amall television studjo, both equipped for colour, and six radio booths. Construction began in April 1965 and should be completed by Jan. 1, 1967. The International Broadcast Centre will be the agency through which broadcasters' program requirements will be met, their questions answered and their locations around the Expo grounds cleared in advance. Although the Centre is planned, staffed and operated by the Corporation on behalf of Expo 67, the CBC networks will share its use with broadcasters of other countries, such as Australia, Japan, Britain and France.

Finance.-The CBC, being a Crown corporation, is financed through public funds authorized by Parliament and through commercial advertising. In the year ended Mar. 31, 1966, commercial revenue accounted for about 26 p.c. of the Corporation's income. It is recognized that such revenue cannot be expected to grow significantly beyond this level, since there are no large untapped sources of advertising revenue available to television and the CBC continues to follow a policy whereby certain programs are not available to sponsorship (including news, talks and public affairs, farm and fisheries broadcasts, school broadcasts, religious and institutional broadcasts) and also deliberately restricts the quantity of commercial messages. The Corporation's efforts to increase commercial revenues are at no time allowed to influence its program decisions.

The following statement of operations shows a 7.4 -p.c. increase in expenses in $1965-66$ over the previous year to the amount of $\$ 133,446,819$. Increases for the previous four years were: 1964-65, 7.1 p.c.; 1963-64, 6.5 p.c.; 1962-63, 0.7 p.c.; and 1961-62, 6.6 p.c. The small increase in 1962-63, as compared with other years, was attributable to the austerity program which caused postponement of planned extensions and improvements to the national broadcasting service. The $1965-66$ grant of $\$ 97,044,000$ voted by Parliament to discharge the responsibilities of the national broadcasting service was under-expended by $\$ 1,981,000$.

## 8.-Financial Statement of CBC Operations, Years Ended Mar. 31, 1965 and 1966

| Item | 1964-65 | 1965-66 |
| :---: | :---: | :---: |
|  | \% | 8 |
| Expenses-. |  |  |
| Production and Distribution- |  |  |
| Cost of programs..... | 79,618,703 | 85,656,983 |
| Network distribution. | $10,727,250$ $5,003,930$ | 11,536,284 |
| Payment to private stations | 4,752,553 | 4,590,870 |
| Commissions to agencies and networb | 3,718,955 | 3,944,840 |
| Emergency broadcasting. | 869.335 | 887.043 |
| Operational supervision and services. | 10,316,690 | 11,176,524 |
| Selling and Administration- |  |  |
| Selling expense... | 1,998,579 | 2,125,359 |
| Engineering and development. | 1,128,796 | 1.104,872 |
| Management and central services | 5,331,629 | 5,904,756 |
| Interest on loans.. | 373,960 | 1,009,323 |
| Totals, Expenses. | 123,840,384 | 133,446,819 |
| Income- |  |  |
| Parliamentary grant. | 85, 869,222 | 94,350. 134 |
| Advertising revenue (gross) | 32,871,894 | 33,562.816 |
| Interest on investments | 211,584 | 357.008 |
| Miscellaneous.. | 365,669 | 438.211 |
| Totals, Inconie. | 115,318,169 | 128,208, $16 \%$ |
| Depreciation included with total erpent | 4,522,211 | 4,739,652 |
|  | 123,840,384 | 133,446,819 |

## Statistics of the Broadcasting Industry

Financial and other statistics of the radio and television broadcasting industry are obtained by the Dominion Bureau of Statistics in co-operation with the Board of Broadcast Governors and the Department of Transport: summary figures for private and CBC sectors are given in Table 9 for 1963-65.

In 1965,281 private radio stations and 65 television atations reported to DBS. The operating revenue of the broadcasting industry in 1965 amounted to $\$ 171,600,000$, an increase of 11.7 p.c. over the previous year. Of the total, radio broadcasting accounted for $\$ 72,800,000$ or 42.4 p.c. and television broadcasting for $\$ 98,800,000$ or 57.6 p.c.; in 1964 , radio received $\$ 67,200,000$ or 43.8 p.c. and television $\$ 86,400,000$ or 56.2 p.c. Revenue from network and national advertising represented 62.9 p.c. of the total broadcasting revenue and revenue from local advertising 37.1 p.c.; network and national advertising, and
local advertising increased by 10.3 p.c. and 12.9 p.c., respectively, over 1964; other nonbroadcasting revenue increased by 21 p.c. Operating expenses in 1965 at $\$ 249,200,000$ were 9 p.c. higher than in 1964. The growth of revenues exceeded the growth of expenses and resulted in an operating profit of $\$ 21,500,000$ in 1965 compared with $\$ 15,300,000$ in 1964 . After adjustment on account of other income and expenses and income taxes, the final net profit of the private sector of the broadcasting industry for 1965 was $\$ 13,942,000$ compared with $\$ 10,000,000$ in 1964. There are no CBC profits or losses in the figure of net profit because any unexpended balance of the parliamentary grant is treated as an account due to the Government of Canada.

## 9.-Revenue, Expense and Employee Statistics of the Radio and Television Broadcasting Industry, 1963-65

| Item | 1963 |  | 1964 |  | 1965 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Private Stations | CBC | Private Stations | CBC | Private Stations | CBC |
|  | \$ | \$ | \$ | \$ | \$ | $\$$ |
| Operating Revenue and Grants |  |  |  |  |  |  |
| Broadcasting revenue from network and national advertising. | 58; 192,467 | 21,860,000 | 69, 425,452 | 23,051,000 | 78,413; 420 | 23,581,000 |
| Broadcasting revenue from local advertising. | 47,505,252 | 1,801,000 | 51,957,524 | 1,349,000 | 58,757,439 | 1,447,000 |
| Non-broadcasting operating revenue. Grants received ${ }^{1}$ | 6,075,736 | $1,885,000$ $82,449,000$ | 7,222,291 | $1,377,000$ $90,391,000$ | 8,623,933 | $\begin{array}{r} 794,000 \\ 99,089,000 \end{array}$ |
| Totals, Operating Revenue and Grants. | 111,773,455 | 106,895, 000 | 128,605,267 | 115,368,000 | 145,794,792 | 124,911,000 |
|  |  |  |  |  |  |  |
| Representative agency commissions. | 5,856,156 | 26,000 | 6,952,368 | 53,000 | 7,379,878 | 24,000 |
| Interest charges <br> Depreciation and amortization of leasehold improvements. | 3,111,740 | 3,000 | 3,032,855 | 377,000 |  |  |
|  | 7,063,202 | 4,072,000 | 7,973,337 | 4,523,000 | 9,251,532 | 4,739,000 |
| Rent, repairs and maintenance, insurance, property taxes, fuel and electricity. | 8,963,678 | 5,866,000 | 9,700,782 | 7,179,000 | 9,897,891 | 7:016,000 |
| Salaries and wages................... | 43,085,037 | 44, 421,000 | 46, 563, 657 | 48, 807,000 | 49,799,400 | 52,422,000 |
| Staff benefits.. | 1,308,215 | 3,193,000 | 1,437,515 | 3,559,000 | 1,798, 836 | 3,947,000 |
| Artists' and other talent fees........ | 4,299,224 | 13,738,000 | 4,870,213 | 13,912,000 | 5,253,509 | 13,692,000 |
| Performing rights. <br> Telephone and telegraph and outside services | 2,211,263 | 5,355,000 | 2,559,323 | 5,440,000 | 2,951,057 | 7,010,000 |
|  | 6,512,236 | 11,199,000 | 7,197,533 | 11,897,000 | 8,360,613 | 12,254,000 |
| Films, tapes, recordings-rental and purchased. <br> Advertising, promotion and travel. | 7,552,277 | 11,260,000 | 9,431,869 | 11,975,000 | 11,405,955 | 14,283,000 |
|  | 6,326,607 | 2,015,000 | 7,085,511 | 2,189,000 | 7,749,728 | 2,856,000 |
| Advertising, promotion and travel. <br> Taxes and licences (other than income or property) | 1,604,131 |  | 1,682,818 | - | 1, 892, 280 |  |
| Office and other operating expenses.. | 5,119,617 | 5,747,000 | 4,771,149 | 5,457,000 | 5,880,871 | $5,634,000$ |
| Totals. Operating Expenses... | 103,013,383 | 106,895,000 | 113,258,930 | 115,368,000 | 124,279,007 | 124,911,000 |
| Net operating income including grants | +8,760,072 | - | +15,346,337 | - | +21,515,785 | - |
| Net of other income and expenses... Provision for income tazes. | +1,381,192 | - | + 634.243 | 二 | + 613,030 | - |
|  | 4,678,968 |  | 5,978,907 |  | $8,186,415$ |  |
| Net income after tares. | +5,462,296 | - | +10,001,673 | - | +13,942,400 |  |
| Average monthly number of employees. | 8,395 | 7,765 | 8,503 | 8,121 | 8,945 | 7,947 |

[^280]
## Section 2.-Postal Service

The basic tasks of the Canadian Postal Service are to receive, convey and deliver postal matter with speed and security. To carry out these duties, it maintains hundreds of post offices and utilizes air, railway, land and water transportation facilities. In addition, associated functions include the sale of stamps and other articles of postage, the registration of letters and other mail for dispatch, the insuring of parcels, the accounting of COD articles, and the transaction of money order and Post Office Savings Bank business. Because of its transcontinental facilities, the Post Office also assists other government departments with such tasks as selling unemployment insurance stamps, collecting government annuity payments, distributing income tax forms and Public Service employment application forms, and displaying government posters.

Post offices are established wherever the population warrants. Those in rural areas and small urban centres transact all the functions of a city office. In larger urban areas, postal stations and sub-offices have full functions similar to the main post office, including general delivery service, lock-box delivery and letter-carrier delivery.

Much sophisticated automatic equipment has been installed in Canada's larger post offices, which could be described as complex semi-automated plants. Such devices include conveyors and chutes, parcel and bag sorting machines, photo-electric counters, intercom systems, observation gallery telephone systems, and industrial music. Outside the post office building are found such innovations as mailmobiles, automatic stamp vending machines, and curbside plastic mail boxes.

The operating service of the Post Office Department is organized into 14 districts, each under a district director. These district directors and the Postmasters, Toronto and Montreal, report directly to the Assistant Deputy Postmaster General, who has the responsibility of conducting the normal field operations of the Postal Service. The operating and support functions required in the provision of postal service to the public are the responsibility of the local postmasters who receive technical and administrative assistance from district offices at strategic points.

Postal service is provided in Canada from Newfoundland to the west coast of Vancouver Island and from Pelee Island, Ont. (the most southerly inhabited point of Canada), to settlements and missions far into the Arctic. Canada's airmail system provides several transcontinental flights daily, intersected by branch and connecting lines radiating to every quarter and linking up with the United States airmail system. All first-class domestic mail up to and including eight ounces in weight is carried by air between one Canadian point and another, whenever delivery can thus be expedited. Air stage service provides the only means of communication for many areas in the hinterland. There are approximately 46,000 miles of airmail and air stage routes. However, the railways are still the principal means of distant mail transport.

At Mar. 31, 1965 there were 11,255 post offices in operation, distributed provincially as follows: Newfoundland 690, Prince Edward Island 106, Nova Scotia 782, New Brunswick 513, Quebec 2,461, Ontario 2,722, Manitoba 800, Saskatchewan 1,166, Alberta 1,042, British Columbia 909, Yukon Territory 20 and Northwest Territories 44. Letter-carrier delivery, performed in 188 urban centres, employed over 9,000 uniformed carriers. Rural mail routes are generally circular in pattern and average about 26 miles in length. Some 1,169 side services transport mail between post offices, railway stations, steamer wharves and airports, and 1,858 stage services convey mail to and from post offices not located on railway lines. Transportation of mail by motor vehicle on highways is expanding and more than 468 such services were in operation in 1965, many of them replacing or reducing con-
veyance by rail. In 1965 there were 1,042 city mail services transporting mail to and from post offices, postal stations and sub-post offices, collecting mail from street letter-boxes and delivering parcel post. Over $50,000,000$ miles are travelled annually on about 9,000 land mail services; both land mail and coastal mail services are performed under contract.

Revenue and expenditure of the Post Office Department for the five years ended Mar. 31, 1961-65 are shown in Table 10; gross revenue receipts are received mainly from postage, either in the form of postage stamps and stamped stationery, or postage meter and postage register machine impressions. Some postage is also paid in cash without stamps, stamped stationery or meter and register impressions. The gross value of the postage stamps and stamped stationery sold during $1964-65$ was $\$ 103,893,949$, and receipts from postage meter or postage register impressions and postage paid in cash by other means amounted to $\$ 142,685,105$.

## 10.-Revenue and Expenditure of the Post Office Department, Years Ended Mar. 31, 1961-65

Nore.-Figures from 1868 will be found in the corresponding table of previous Year Books beginning with the 1911 edition.

| Year | Gross Revenue | Net Revenue ${ }^{\text {t }}$ | Expenditure ${ }^{\text {a }}$ | $\begin{aligned} & \text { Surplue ( }+ \text { ) } \\ & \text { Deficit ( }- \text { ) } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: |
|  | 8 | \$ | \$ | * |
| 1981. | 202,003,790 | 173.645,658 | 178, 371,716 | -4,726,058 |
| 1962 | 213, 517,994 | 183, 678,936 | 185,019,700 | $-1,340,764$ |
| 1983 | 222,358,848 | 192,830,859 | 189,344, 410 | +3,486,449 |
| 1964. | 235, 807,940 | 200,774,264 | 206,900,000 | $-37.507 .200^{3}$ |
| 1965. | 263,704,342 | 230,488,693 | 210,458,700 | -11,479,200 |

1 Gross revenue less commissions and allowances to postmasters and other small items.
${ }^{2}$ Excludes rental oi semi-staff and staff post offices.
${ }^{1}$ In accordance with new accounting practice.

In the year ended Mar. 31, 1965, post office money orders, issued for any amount not exceeding $\$ 100$ and payable in almost any country of the world, were sold at more than 9,137 post offices and money orders payable in Canada only, for amounts not exceeding $\$ 15.99$, were sold at some 1,531 additional post offices. Table 11 shows the amount of money order business conducted by the Postal Service in recent years.
11.-Operations of the Money Order System, Years Ended Mar. 31, 1981-65

| Year | Money Order Offices in Canada | Money Orders Issued in Canada | Value of Orders Issued in <br> Canada | Value Payable in- |  | Valne of Orders Issued in Other Countries. Payable in Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Canada | Other Countries |  |
|  | No. | No. | \$ | $\leqslant$ | 5 | \$ |
| 1981. | 11.098 | 55,839,421 | 886,978,976 | 858,278,412 | 28,698,568 | 5.505,224 |
| 1962.. | 10,708 | $56,252,265$ | 893, 812,298 | 867,182,785 | 26,329,506 | 5,940,795 |
| 1963. | 10.679 10.690 | $55,448,076$ $55,544,267$ | $898,164,577$ <br> 927 | $874,660,765$ $904,166,425$ | 23,503,811 | 7,681,041 |
| 1985. | 10,668 | 55, 803,081 | 943,684,714 | 919,131,578 | 24,550, 138 | 9,285,388 |

A statement on the financial business of the Post Office Savings Bank will be found in Chapter XXV on Banking, Other Commercial Finance and Insurance.

## Section 3.-The Press*

Daily newspapers published in Canada in 1965 numbered 120, counting morning and evening editions separately. They had a reported circulation of about $4,300,000-82$ p.c. in English and 18 p.c. in French. Since surveys show that, on the average, a newspaper is read by three persons, it would appear that almost every Canadian who is old enough or literate enough to read examines a Canadian daily on a regular basis. Further, with net advertising revenues in 1964 of $\$ 195,900,000$, they far out-sell the 265 private radio stations ( $\$ 63,000,000$ ) and the 66 private TV stations ( $\$ 58,000,000$ ). Add to this the income from newspaper circulations ( $\$ 71,500,000$ ) and it will be seen that Canada's dailies produce almost twice as much revenue as their competitors. The 13 dailies having circulations in excess of 100,000 accounted for over 53 p.e. of the total circulation. French dailies, as would be expected, have their widest circulation in Quebec where 11 of the 13 in existence in 1965 were published. Rural people are the main readers of weekly newspapers, which cater to local interests and exercise an important influence in the areas they serve. It should be mentioned that there are 77 independent ethnic daily or weekly newspapers contributing to Canadian culture and traditions. Published in many languages, often mixed with English, they enjoy a combined paid circulation of about 500,000 and serve $2,000,000$ readers.

There are three main newspaper chains in Canada-the Thomson (27 dailies); the Southam (eight dailies); and FP Publications Ltd. (eight dailies). Although largest in numbers, the Thomson papers are smallest in circulation, tending to be small-city papers where the population can sustain only one daily. The Southams control about 20 p.c. of the total daily circulation, FP about 18 p.c. and Thomsons 7 p.c. About 60 p.c. of Canada's daily newspapers are privately owned or independent.

The Canadian Press, a co-operative organization owned and operated by Canada's daily newspapers, provides its 103 members with world and Canadian news and news photographs, mostly by means of teletype and wirephoto transmission. It also serves weekly newspapers and radio and television stations. It is, in effect, a partnership through which each member newspaper provides its fellow members with the news of its particular area and through which the general news of the world is brought to Canada. Cost of editing and transmission is divided among members according to the population of the cities in which they publish. CP gets world news from Reuters, the British agency, and from the Associated Press, the United States co-operative, and these agencies have reciprocal arrangements with CP for their coverage of Canada. CP now maintains a French-language service in Quebec which originates stories in French for the French-language press. For national distribution, news originating in Quebec in French is translated into English.

The United Press International of Canada is a limited company which is associated with the United Press International World Service of which it is an affiliate. From its headquarters in Montreal, it provides Canadian and international news and pictures to over 90 subscribers in Canada as well as being the outlet of Canadian news and pictures for world distribution through United Press International facilities. Agence France Presse maintains offices in Montreal and Ottawa and certain foreign newspapers have agencies in Ottawa to interpret Canadian news for their readers.

Press Statistics.-The following tables are based on data estimated from Canadian Advertising. Circulation figures are given for daily English-language and French-language newspapers only. Such circulation figures are relatively easy to obtain because, in their own interest, newspapers qualify for and subscribe to the Audit Bureau of Circulation; for these, $A B C$ 'net paid' figures have been used. On the other hand, circulation data for foreign-language newspapers, weekly newspapers, weekend newspapers and magazines are incomplete and therefore not usable.

[^281]
## 12．－Estimated Numbers and Circulations of reporting English－Language，French－ Language and Forelgn－Language Newspapers，by Prownee， 1564 and 1965

| Province or Territory | 1964 |  |  |  | 1965 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Daily |  | Weekly ${ }^{\text {d }}$ Weekend |  | Daily |  | Weekly ${ }^{1}$ | Weekend |
|  | No． | Circulation ${ }^{\text {a }}$ | No． | No． | No． | ｜Circulation ${ }^{\text {² }}$ | No． | No． |
|  | Enalish－Langoter Newspapers |  |  |  |  |  |  |  |
| Newionndland．．．．．．．．．．．． | 3 | 29，949 | 4 | 1 | 3 | 29，576 | 4 | 1 |
| Prince Edward Island．．．．． | 3 | 28，092 | \％ | － | 3 | 28，639 |  |  |
| New Brunswick．．．．．．．．．．． | 5 | 185， 173 | 15 | 二 | ${ }_{5}^{6}$ | 156，831 | 81 | － |
| Quebec．．．．．．．．．．．．．．．．．．．．． | 4 | 348，658 | 19 | 1 | 4 | 338.245 | 17 | 1 |
| Ontario．．．．．．．．．．．．．．．．．．．． | 47 | 1，728，395 | 245 | 5 | 47 | 1，756，978 | 243 | 5 |
| Manitobs．．．．．．．．．．．．．．．．．． | 7 | 219.741 | 65 | － | 9 | 228，086 | 62 | － |
| Saskatchewan．．．．．．．．．．．．．． | 4 | 120， 668 | 119 | $\rightarrow$ | 4 | 121， 126 | 114 | － |
| Aberta．${ }_{\text {Aritisb }}$ Columbja．．．．．．．．．．．．． | 15 | 279.850 519.385 | 89 91 | $-1$ | $1{ }^{7}$ | 282.737 484,973 | 90 | t |
| Yukon and Northwest ${ }^{\text {Bra }}$ | 15 | 519，385 | 91 |  | 14 | 484，973 | 96 |  |
| Totals． | － | － | 3 | － | － | － | 4 | $\cdots$ |
|  | 101 | 3，513，646 | 682 | 8 | 102 | 3，520，445 | 676 | 8 |
|  | French－Languagr Nbwbpaperga |  |  |  |  |  |  |  |
| Nova Scotia．．．．．．．．．．．．．． | － | － | 1 |  |  |  | 1 | － |
| New Brunswick．．．．．．．．．．．． | 1 | 10，057 | 3 | － | 1 | 10.146 | $3_{3}^{3}$ | － |
| Quebec． | 11 | 820.611 | 183 | 18 | 11 | 703，958 | 165 | 16 |
| Manitobs．．．．．．．．．．．．．．．．．．．．．．． | $\bigcirc$ | 34，674 | ${ }_{1}^{6}$ | 二 |  | 36，649 | ${ }_{1}^{6}$ | － |
| Saskatchewad | － | － | 6 | 二 | － | － | 6 | － |
| Alberts． |  | － | 1 | － | － | － | 1 |  |
| Totals． | 13 | 865，342 | 181 | 16 | 13 | 754，753 | 173 | 16 |
|  | Forkign－Lanquage Newgrapers4 |  |  |  |  |  |  |  |
| Quebec． <br> Ontario． <br> Manitobs． <br> Alberta． <br> Britiah Columbia． | - - 12 <br> -2 - 41 <br> - - 15 <br> 3  2 <br>   2 |  |  | $\square$$二$$=$ | $\square_{2}$$\square_{3}$ | -- | 12421413 | 二二二 |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Totals．．．．．．．．．．．． | 5 |  | 72 |  | 5 |  | 72 | － |

${ }^{1}$ Includes semi－weeklies，tri－weeklies and bi－weeklies．${ }^{2}$ Circulation not reported for all newspapers． ：Includes bilinguals．All daily and weekly foreign－language publications given here are considered to be newapapers．

## 13．－Estimated Numbers and Circulations of reporting English－Language and French－ Language Newspapers Published in Urban Centres of Over $\mathbf{3 0 , 0 0 0}$ Population， 1964 and 1365.

Nore．－Figures from 1945 will be found in the corresponding table of previons Year Books beginning with the 1947 edition．

| Urban Centre | $\underset{\substack{\text { Households } \\ \text {（Census } \\ 1961 \text { ）}}}{\substack{\text { ．} \\ \hline}}$ | 1964 |  | 1963 |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Daily | Weekly | Daily | Weekly |
|  | No． | No． 1 Circulation | No． | No．｜Circulation | No． |
|  |  | English－Lanounge Newspapers |  |  |  |
| Belleville，Ont． | 8，563 | 1 13，872 |  | 14.510 | － |
| Brantiord，Ont．．． | 15，914 | $1 \quad 22,837$ | 1 | 1 23，436 | －1 |
| Calgary，Alta．．．． | － 71,588 | 2 114，341 | 1 | $2 \quad 11 \overline{6.289}$ | 1 |
| Cornwall．Ont． | 10.753 | 1 13，500 |  | 1 13，334 | － |
| Dartmouth，N．S． | 10，945 | $-1115$ |  | － 11127,486 | $\frac{1}{3}$ |

13．－Estimated Numbers and Circulations of reporting English－Language and French－ Language Newspapers Published in Urban Centres of Over 30，000 Population， 1964 and 1965－concluded．

| Urban Centre | $\begin{gathered} \text { Households } \\ \text { (Census } \\ \text { 1961) } \end{gathered}$ | 1964 |  |  | 1965 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Daily |  | Weekly | Daily |  | Weekly |
|  | No． | No． | Circulation | No． | No． | Circulstion | No． |
|  | 11，695 | Englise－Language Newspapers－concluded |  |  |  |  |  |
| Fort William，Ont． |  | 1 | 15，960 |  |  | 16，359 |  |
| Granby，Que．． | 11,6778 10,773 |  | 18，253 |  |  | 15，330 | $-1$ |
| Halifax，N．S． | 21，50173,829 | ${ }_{1}^{2}$ | 111，196 |  | 2 | 113,228116,923 |  |
| Hamilton，Ont． |  |  |  |  | 1 |  |  |
| Kingston，Ont． | 13，931 | 1 | 23，555 |  | 1 | 24，633 |  |
| Kitchener，Ont． | 20，600 |  | 40，942 |  | 1 | 43，244 | 二 |
| Lethbridge，Alta | 10，013 | 112 | 117，661 |  | 1 | 121，772 |  |
| London，Ont．． | 47，498 |  | 117，527 |  | 2 |  | － |
| Moncton，N．B． | 10，529 | ${ }_{2}^{2}$ | $\begin{array}{r} 27,867 \\ 334,419 \end{array}$ |  | 2 | 29，095 | $-{ }^{2}$ |
| Moose Jaw，Sask | 330,023 9,562 | $\stackrel{1}{1}$ | $\begin{array}{r} 334,419 \\ 8,702 \end{array}$ | － | 1 | 8，907 |  |
| New Westminster，B．C． | 9，218 | 1 | 18，615 |  | 1 | 18，502 | $-1$ |
| Oshawa，Ont．． | 70，114 | 2 | 141，990 |  | 1 | 21，131 |  |
| Ottawa，Ont． |  |  |  | 1 | 2 | 148，175 | 1 |
| Peterborough，Ont | 12，853 | 1 | 23，632 | 1 | 1 | 24，789 | － 1 |
| Port Arthur，Ont． | 11，609 | 1 | $\begin{array}{r} 14,890 \\ 5,392 \end{array}$ |  | 1 | 15，006 | － |
| Quebec，Que． | 42,126 30,125 | 111 |  |  | 1 | 5，088 | － |
| St．Catharines，Ont． | 23，287 |  | 29，185 |  | 1 | 30， 542 | － |
| St．James，Man． | 23,076 | － | 23， 137 |  |  | 30，542 | 1 |
| St．John＇s，Nfld． | 12，971 | 2 |  | 1 | 2 | 22，672 |  |
| Saint John，N．B． | 14，423 | 1 | 23,137 47,930 | ${ }_{1}^{11}$ | 2 | 49，323 | 1 |
| Sarnia，Ont． | 13,71025,912 |  | 16，788 | $-1$ | 1 | 16，437 |  |
| Saskatoon，Sask． |  | 1 | 43,39818,822 |  | 1 | 43，976 | － |
| Sault Ste．Marie，Ont | $\begin{array}{r}25,912 \\ 11 \\ \hline 1\end{array}$ |  |  | － | 1 |  |  |
| Shawinigan，Que． | 7，232 | 1 | 8,84730,278 |  |  |  | － |
| Sherbrooke，Que | 19，526 |  |  | 1 1 1 | 1 | 8,703 30,195 | $-1$ |
| Sudbury，Ont． Sydney，N．S． |  | 1 | 30,278 27,111 | 1 | 1 | 27，136 | $14^{3}$ |
| Toronto，Ont． | 172,86412,372 | － | 779，641 | $15^{3}$ | 4 | 777，074 |  |
| Trois－Rivieres， |  |  |  | 1 |  | － | $14^{3}$ |
| Vancouver，B．C | $\begin{array}{r} 12,016 \\ 118,405 \\ 18,475 \end{array}$ | 3 | 386，968 |  | 2 | 346,54562,347 | 142 |
| Victoria，B．C． |  | 2 | －59，980 | 3 | 2 |  |  |
| Welland，Ont． | $\begin{array}{r} 18,475 \\ 9,428 \\ 33,060 \end{array}$ |  | 17，801 |  | 1 | 18，303 | － |
| Windsor，Ont．．．．．．．．．．．．．． |  | 1 79，700 <br> 2 201,461 |  | 1 | 1 | 81,077203,460 | －2 |
|  | $\begin{aligned} & 33,060 \\ & 74,126 \end{aligned}$ |  |  | 2 | 2 |  |  |
|  |  | French－Language Newspapers |  |  |  |  |  |
| Chicoutimi，Que．， | 5，7866,995 | 二 | 二 | 32 | － | － | 2 |
| Chomedey，Que |  |  |  | 24 |  | － |  |
| Cornwall，Ont． | 10，753 | － | － | 1 | － | － | 1 |
| Edmonton，Alta | 76，275 | ， | － | 1 | － |  | ， |
| Granby，Que． | 7，478 | 1 | 9，665 | 1 | 1 | 11，275 | 1 |
| Hull，Que． | 13，304 | － |  | $2{ }^{2}$ | － |  | $2^{2}$ |
| Jacques Cartier，Que． | 8，565 | － | － | 14 |  | － | 14 |
| Lachine，Que． | 10，058 | － | － | 14 |  |  | 14 |
| LaSalle，Que． | 8，128 | － | － | 14 | － | － | 14 |
| London，Ont． | 47，498 | － | － | 14 | － |  | 14 |
| Moncton，N．B． | 10，529 | 1 | 10，057 |  | 1 | 10，146 |  |
| Montreal，Que． | 330， 023 | 5 | 539，727 | $26^{5}$ | 5 | 415，797 | 278 |
| Ottawa，Ont． | 70，114 | 1 | 34，674 |  | 1 | 36，649 |  |
| Quebec，Que．．．．． | 42，126 | 3 | 187，050 | $3^{2}$ | 3 | 191，204 | ${ }^{32}$ |
| St．Boniface，Man． | 9，561 | － | － | 1 | － | － | 1 |
| St．Laurent，Que． | 12，306 | 二 | － | 1 | － | － | 1 |
| Shawinigan，Que． | 7,232 15,775 | －1 |  | 5 | 1 | － 504 | 1 |
| Sudbury，Ont．． | 19，526 | 1 | － | $\stackrel{1}{2}$ |  | 42，504 | 1 |
| Trois－Rivierres，Que． | 12，372 | 1 | 41，494 | 2 | 1 | 43，178 | 3 |

[^282]
## 14.-Estimated Numbers of Foreign-Language Publications, 1964 and 1965


15.--Estimated Numbers of Magazines and Related Publications, by Broad

| Classification | 1964 r | 1885 | Classification | 1964 ${ }^{\text {r }}$ | 1985 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. |  | No. | No. |
| Agricultural and rural.............. | 58 | 59 | Reliçious........................ | 37 | 37 |
| Construction. | ${ }^{23}$ | ${ }^{29}$ | Services and directories.......... | 89 | 97 |
| Educational ........... | 105 13 | 105 14 | Sports and entertaimment........i- | 72 |  |
| Government and govermicent services. | 28 | 28 | cations......................... | 197 42 | 207 44 |
| Home, social and welfare........... | 44 | 47 | Miscellaneous. . . . . . . . . . . . . . . . | 23 | 26 |
| Labour............... | 14 | 16 |  |  |  |
| and nursing..................... | 59 | 62 |  |  | 84 |
| Prolessions (engineering, architec ture, law, accountancy, photography, etc.). | 20 | 22 | Total | 824 | 84 |

Revenue from Printing and Publishing.--One of the industrial groups for which information is collected by the DBS in its annual Census of Manufactures is the printing, publishing and allied industries group which includes establishments engaged primarily in the publishing and printing of newspapers, magazines, periodicals, books, almanacs, maps, guides and the like, as well as establishments printing such publications for publishers, publishing firms that do no printing, and engraving, stereotyping and allied industries. Of interest in connection with press statistics is the amount of revenue received by these industries from advertising and from subscriptions or sales, which is given for the years 1963 and 1964 in Table 16. Additional data on manufacturing activity of this industrial group are included in Chapter XVI on Manufactures.

## 16.-Revenue from Advertising and from Subscriptions or Sales of Newspapers, Periodicals and Books, 1963 and 1064

| Classes | 1963 |  |  | 1964 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Net Revenue' from- |  |  | Net Revenuel from- |  |  |
|  | Advertising | Subscriptions and Sales | Total | Advertising | Subscriptions and Sales | Total |
|  | \$ ${ }^{+000}$ | \$'000 | \%'000 | * 000 | \$ 000 | \$ 000 |
|  |  |  |  |  |  |  |
| Retail...................... | 96,419 | 67, | 255,070 | 101,654 | ... | 26, 1 |
| Classified | 40,074 | ... | ... | 48.164 | ... | $\ldots$ |
| National. | 51,126. | ... | ... | 51.078 | ... | ... |
| Newspapers, national weekend. | 17.039 | 9,466 | 26.506 | 15.708 | 8.021 | 23,729 |
| Local....................... | 2,412 | ... | . $*$ | 1,884 | ... | , |
| National. | 14,6.97 | ... | ... | 13,844 | ... | $\ldots$ |
| Newspapers, weekly, semi-weekly. tri-weekfy, etc. <br> Local. <br> National | 24,879 | 5,740 | 30,618 | 28, 483 | 6,301 | 34.784 |
|  | 19.815 5.664 | $\ldots$ | ... | 21,430 7,059 | ... | ... |
| Controlled distribution weekly newspapers Local National | 697 | 22 | 719 | 922 | 76 | 998 |
|  | 685 |  | $\ldots$ | 855 | ... | $\ldots$ |
|  | 62 | ... | $\ldots$ | 66 | ... | $\ldots$ |
| Magazines of general circulation. <br> Telephone and city directories ${ }^{2}$. | 17,320 | 8,122 | 25.442 | 17,818 | 8,748 | 20,560 |
|  | 432 r | 1,790 | 2,221 | 440 | 1,982 | 2,423 |
| Trade, technical, prolessional and financial pub lications. | 24,933 | 5,561 | 30,494 | 26,400 | 6,825 | 33,224 |
| Agricultural publications.......................... | 5,617 | 5942 | 6.559 | 5,56t | -949 | 6,501 |
| Religious publications. | - 338 | 4,046 | 4,384 | ${ }^{463}$ | 3,250 | 3,714 |
|  | 44 | 1,138 | 1,182 | 50 | 826 | 877 |
| Fraternal publications. | 402 | 402 | 804 | 375 | 418 | 794 |
|  | 29 | 480 | 508 | 31 | 378 | 409 |
| All other periodicals............................. | 1,485 | 1,838 | 3,323 | 1,424 | 2,669 | 4,093 |
| Totals, Newspapers and Feriodicals....... | 284,832 | 107,005 r | 387,838 | 298,581 | 111,962 | 405,523 |
| Books- |  |  |  |  |  |  |
| Books published and printed. Books publighed only. | $\ldots$ | 9,796 ${ }^{\text {c }}$ | 8.796 r | $\cdots$ | 10,841 | 10,941 |
|  | ... | 17,626 | 17,626 | ... | 19,820 | 19,620 |
| Tetals, Books. | .* | 27, 223 T | \%2,122\% | ... | 30,561 | 30,561 |

[^283]
## CHAPTER XXI.—DOMESTIC TRADE AND PRICES

## CONSPECTUS

Pagn
Part I.-The Movement and Marketing
of Commodities... ..... .. ... 896
Section 1. Merchandigtng and Service Ebtablighments......... .....
Subsection 1. 1961 Census of Mercbandising and Service Establishmeats . ....
Subsection 2. Intercensal Surveys of Wholesale, Retail and Service Establishments
Sidetion 2. The Mareetina of Agrtcultoral Products.
Subsection 1. The Grain Trade. 1964-65
008
Subsection 1. The Grain Trade. 1904-65 908
Subsection 2. Livestock Marketings..
914
Section 3. Storiae and Warehousing... 916
Section 4. Co-operative Organizationg.
918
Section 5. Interprovinctal Freight Mofementis.

The interpretation of the symbols used in the tables throughout the Year Book
will be found on p. viii of this volume.

## PART I.-THE MOVEMENT AND MARKETING OF COMMODITIES

Domestic trade is broad and complicated; it encompasses all values added to commodities traded, provincially and interprovincially, by agencies and services connected with the storage, distribution and sale of goods, such as railways, steamships, warehouses, wholesale and retail stores, financial institutions, etc. Taken in a wide sense, it embraces various professional and personal services, including amusement services such as theatres and sports. Only certain phases of this broad Geld are covered here and, wherever possible, cross references are given to related material appearing in other Chapters. The arrangement of material in a volume such as the Year Book is governed by the necessity of interpretation from various angles. The Index will be found useful in this respect.

## Section 1.-Merchandising and Service Establishments*

The surveys of merchandising and service establishments centre around a census of such business establishments. The first census of this kind related to business transacted for the year 1930 and similar censuses were taken for 1941, 1951 and 1961. The 1961 census, however, collected a wider range of data than the previous censuses; gross margin

[^284]information was collected from retail stores and wholesalers, operating expense figures were collected from wholesalers and service businesses, and more information was sought about the operating characteristics of retailers and wholesalers. Detailed results are given in the census reports,* and some elaborative data, additional to that contained in previous editions of the Year Book, are given in Subsection 1 following.

Each census of merchandising and service establishments forms a new base for intercensal monthly, quarterly and annual surveys, which are sample surveys for some businesses and full coverage for others. Because of the need for more frequent survey bases, it was considered advisable to take a less detailed census every five years instead of every ten, and to place more emphasis on the sample surveys during the intercensal period for the collection of detail such as commodity content of sales to retailers, gross margin data and the analysis of sales by type of buyer. The first quinquennial census was taken in 1966, data from which will become available about mid-1968. Subsection 2 of this Section contains current intercensal information on the distributive trades and continues to project the 1951 base; data related to the 1961 base will be available in 1967.

## Subsection 1.-1961 Census of Merchandising and Service Establishments

As stated above, this Subsection contains certain elaborative information relating to wholesale, retail and service establishments, which supplements summary data given in previous editions of the Year Book and available from census publications.

Table 1 summarizes operating results of selected wholesale trades for incorporated companies in various types of operation. The results give, as a percentage of sales, the gross margin, total operating expenses and a breakdown of expenses into selling, warehouse and delivery, general and administrative and other operating expense.

[^285]| Type of Operation <br> and <br> Kind of Business | Gross Profit | Expensee |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Selling | $\begin{aligned} & \text { Ware- } \\ & \text { house } \\ & \text { and } \\ & \text { Delivery } \end{aligned}$ | General and Admin:strative | Other | Total |
|  | p.e. | p.c. | p.c. | p.e. | p.c. | p.c. |
| Co-operative Marketios Associations and Other Dealers in Primary Products- |  |  |  |  |  |  |
| Grain. . . . . . . . . . . . . . . . . . . . . . . . . . . . | 2.13 | 0.10 | 0.15 | 0.85 | 0.05 | 1.15 |
| Livestock. | 1.48 | 0.45 | 0.10 | 0.66 | 0.01 | 1.22 |
| Wholesale Merchants- |  |  |  |  |  |  |
| Automotive parts and accessories. | 28.77 | 7.21 | 6.23 | 10.59 | 0.86 | 24.89 |
| Motor vehicles. | 14.00 | 4.20 | 2.80 | 5.44 | 0.11 | 12.55 |
| Industrial chemicals. | 14.49 | 4.83 | 2.29 | 5.21 | 028 | 12.61 |
| Drugs and drug sundries (general line) | 12.82 | 1.70 | 3.52 | 5.28 | 0.03 | 10.53 |
| Clothing and /or furnishinge (gesieral line) | 15.17 | 3.79 | 2.45 | 6.73 | 0.20 | 13.17 |
| Dry noods (general tine). | 17.44 | 5.03 | 3.26 | 6.97 | 0.37 | 15.63 |
| Piece goods... | 13.90 | 3.60 | 116 | 6.01 | 0.14 | 10.91 |
| Eleetrical merchandise (zeneral line)............ | 19.47 | 4.95 | 2.83 | 8.64 | 0.05 | 16.47 |
| Electrical wiring supplies and construction materials. |  | 5.23 |  |  | 0.10 |  |
| Grain........................................... | 1.51 | 0.07 | 0.05 | 0.55 | 0.10 | 0.89 |
| Livestock | 12.55 | 0.99 | 6.68 | 3.77 | 0.06 | 11.50 |
| Feed, hay and grain | 14.79 | 2.86 | 4.56 | 5.28 | 0.28 | 12.96 |
| Cigara, cigarettes and tobacco. | 6.53 | 1.63 | 1. 52 | 242 | 0.03 | 5.80 |
| Fruits and vegetablea (general line) | 13.35 | 1.96 | 5.09 | 4.63 | 0.05 | 11.68 |
| Meate and meat products. | 8.80 | 1.21 | 3.26 | 2.99 | 0.23 | 7.69 |
| Prodnce. | 11.53 | 3.26 | 2.78 | 4.41 | 0.10 | 10.55 |
| General merchandise. | 18.47 | 5.47 | 3.02 | 7.44 | 0.16 | 16.09 |
| Groceries (general line). | 6.92 | 106 | 2.09 | 2.87 | 0.07 | 6.09 |
| Hardware (general time). | 38.11 | 5.13 | 3.86 | 8.48 | 0.19 | 17.66 |
| Buildidg materiala (general line) . . . . . . . . . . . . . . | 22.29 | 4.43 | 4.88 | 8.51 | 0.34 | 18.16 |

1.-Operating Results of Selected Trades for Incorporated Wholesale Establishments, as Percentages of Sales, by Type of Operation and Kind of Business, Census is61-concluded

| Type of Operation and <br> Kind of Business | Gross Profit | Expenses |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Selling | Warehouse and Delivery | General and Administrative | Other | Total |
|  | p.c. | p.e. | p.e. | p.c. | p.e. | p.e. |
| Wholesale Merchants-concluded |  |  |  |  |  |  |
| Lumber. . . . . . . . . . . . . . . . | 12.68 | 2.44 | 2.98 | 5.42 | 0.29 | 11.13 |
| Lumber and millwork.... | 20.95 | 4.04 | 5.57 | 8.12 | 0.25 | 17.98 |
| Conatruction machinery and equipment....... | 23.65 | 6.92 | 4.34 | 9.77 | 0.27 | 21.30 |
| Farm machinery and equipment............... Industrial machinery, equipment and supplies | 19.12 | 5.81 | 2.91 | 8.27 | 0.27 | 17.26 |
|  | 23.39 | 6.91 | 3.58 | 10.88 | 0.18 | 21.56 |
| Iron and steel (general line).................. | 15.01 17.94 | 2.16 5.18 | 2.52 | 7.75 | 0.32 | 12.75 |
| Prumbing equipment and supplies.... | 17.71 | 4.89 | 3.25 2.93 | 7.87 | 0.04 0.41 | 15.03 15.80 |
| Plumbing and heating equipment and supplies (general line) | 18.37 | 4.01 | 3.33 | 8.17 | 0.33 | 15.34 |
| Agents and Brakers- |  |  |  |  |  |  |
| Clothing and.'or furnishings (general line)...... | 4. 89 | 2.56 | 0.05 | 1.41 | 0.20 | 4.22 |
| Pjece goods. | 3.65 | 1.79 | 0.00 | 1.32 | 0.01 | 3.12 |
| Livestock. | 1.47 | 0.35 | C. 20 | 0.69 | 0.01 | 1.25 |
| Lumber. | 3.87 | 1.62 | - | 2.09 | -01 | 3.71 |
| Structural ateel | 0.93 | 0.70 | - | 0.12 | 0.01 | 0.83 |
| Manufacturers' Sales Branches- |  |  |  |  |  |  |
| Meats and meat producta. . . . . . . . . . . . . . . . . . | ** | 1.57 | 2.09 | 2.29 | 0.04 | 5.99 |
| Produce. | .. | 1.20 | 2.98 | 1.78 | - | 5.96 |
| Lumber......................................... | * | 0.93 | 0.42 | 2.30 | 0.04 | 3.69 |
| Lumber and millwork........................ | . | 1. 57 | 1.84 | 2.96 | 0.01 | 6.38 |
| Farm machinery.............................. | - | 8.75 | 1.86 | 8.25 | 0.04 | 13.90 |
| Plumbing equipment and supplies.............. |  | 2.94 | 3.43 | 5.12 | 0.50 | 11.99 |

Table 2 shows gross profit ratio (percentage of net sales) of a panel of reporting retail establishments for the census year 1961.

## 2.-Gross Profit Ratio of a Panel of Reporting Retail Establishments, by Kind of Business, Census 1981

(Percentage of net sales)

2.-Gross Profit Ratio of a Panel of Reporting Retail Establitshments, by Kind of Rusiness, Census 1861-concluded

| Kind of Business | Gross Profit | Kind of Business | Gross Profit |
| :---: | :---: | :---: | :---: |
|  | p.c. |  | p.e. |
| Hardware and Hone Furnisbings. . . . . . Hardware stores...................... | 32.7 | Luggage and leather gooda stores. | 34.7 |
| Paiot, glass and wallpaper stores. | 32.6 | Tobacco stores and stands. | 20.3 |
| Frurniture stores................. | 30.6 | Book and stationery stores | 32.1 |
| Household appliance stores. | 30.9 | Artists supplies stores......... ${ }^{\text {a }}$. | 38.4 |
| Television salea and service shops. | 37.0 |  | 30.5 |
| Furniture, television, radio and appliance |  | Mift, novelty and souvenir shop. | 34.8 34 |
| stores. . . . . . . . . . . . . . . . . . . . . . . | 26.4 | Jewellery stores............ | 41.6 |
| Television, radio, piano and music stores.. | 38.0 | Jewetlery repair shops | 70.2 |
| TV and radio repair shops................ | 50.6 | Sporting goods stores. | 30.4 |
| Housebold applisice repair shops......... | 53.1 | Bicyele shops ........ | 89.5 |
| Floor coverings, curtaing, upbolstery and | 40.6 | Boats, outboard motors, boating acces sories. | 23.8 |
| Picture and picture framing stores............ | 59.5 | Motorcycle dealers. | 26.9 |
| Antique shops............................. | 43.0 | Pet shops. | 28.9 |
|  |  | Opticians. | 58.8 |
| Other Retail Stores | 34.5 | Health applian | 31.6 |
| Drug stores without meals or lunches | 32.3 | Toy shops.. | 38.8 |
| Drug stores with mesls or junches | 32.9 | Toy |  |
| Fuel oil dealers........... | 25.5 | Total | 26.9 |
| Florists. | 50.3 |  |  |

Table 3 shows operating expenses of service trade establishments, as percentages of receipts, for the more important kinds of businesses.
3.-Operating Expenses of Selected Service Trade Establishments, as Percentages of Receipts, Census 1961

| Kind of Bnsiness | Salaries, Waget, Commigsions | Rent | Interest, Mortgage and Other | Taxes and Licences | Depreciation | Repairs | Comeributions and Other | Total Operating Expenses |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | p.e. | p.e. | p.c. | p.c. | p.c. | p.c. | p.e. | p.c. |
| Regular theatres. | 21. ${ }^{\text {\% }}$ | 7.4 | 0.7 | 5.8 | 3.8 | 2.4 | 51.2 | 02.6 |
| Billiard parlours. ......... | 13.5 | 9.2 | 1.5 | 3.7 | 4.7 | 2.9 | 39.4 | 73.9 |
| Bowling alleys............. | 26.3 | 11.4 | 5.2 | 4.0 | 9.8 | 4.8 | 27.5 | 89.0 |
| Goll courser... | 34.2 | 3.0 | 4.0 | 3.1 | 5.7 | 6.4 | 35.5 | 91.9 |
| Racetrack operation........ | 17.6 | 3.2 | 4.6 | 2.9 | 3.9 | 2.3 | 49.3 | 83.8 |
| Advertiging agencies....... | 62.9 | 5.9 | 0.4 | 0.6 | 1.3 | 0.4 | 22.9 | 94.4 |
| Chartered and certified ac. countants. | 39.6 | 4.4 | 0.6 | 0.4 | 1.1 | 0.2 | 14.4 | 60.7 |
| Barber shops............... | 27.2 | 10.6 | 0.5 | 1.6 | 2.5 | 1.5 | 13.8 | 57.7 |
| Beauty salons. | 36.4 | 9.1 | 0.8 | 1.2 | 3.3 | 1.8 | 22.7 | 75.1 |
| Hand landries............ | 8.2 | 10.9 | 1.0 | 4.6 | 1.5 | 2.8 | 29.8 | 58.9 |
| Dry cleaning and dyeing plants with lanndry (ex cept rug cleaning). | 47.5 | 4.0 | 1.3 | 1.1 | 6.0 | 2.3 | 24.5 | 91.7 |
| Linen supply service with power laundry | 41.0 | 0.7 | 0.6 | 1.4 | 4.3 | 3.2 | 35.9 | 87.0 |
| Shoe repair shops. . . . . . . . . | 16.5 | 9.0 | 0.6 | 2.1 | 2.1 | 3.5 | 31.2 | 65.0 |
| Shoeshíne parlours.......... | 21.4 | 14.4 | 0.1 | 1.7 | 0.4 | 3.2 | 20.2 | 61.4 |
| Falet service, pressing and repair shops. | 18.6 | 7.6 | 0.6 | 1.8 | 2.8 | 1.9 | 34.1 | 68.5 |
| Blacksmiths and general repair shops. | 21.4 | 0.9 | 1.6 | 2.4 | 2.7 | 5.1 | 36.0 | 70.1 |
| Funeral directors...+...... | 22.7 | 2.0 | 1.7 | 2.2 | 5.3 | 2.3 | 36.0 43.6 | 79.8 |
| Portrait photographers.... | 21.4 | 5.2 | 0.8 | 1.2 | 3.5 | 1.4 | 40.7 | 74.2 |
| Automobile snd truck rentals (without driver) | 16.0 | 3.1 | 4.2 | 8.8 | 22.8 | 9.3 | 38.1 | 97.3 |
| Driving achools............ | 45.4 | 4.2 | 0.6 | 1.4 | 8.2 | 4.3 | 23.9 | 85.0 |
| Full year hotels, licensed. + | 25.4 | 2.0 | 2.3 | 3.2 | 4.6 | 2.8 | 53.8 | 93.6 |
| Wotels. . ................... | 16.0 | 1.0 | 8.9 | 6.0 | 15.3 | 8.9 | 98.7 | 81.8 |
| Eating places. | 20.6 | 3.9 | 0.7 | 0.9 | 2.6 | 1.3 | 55.5 | 85.5 |
| Fish and chip shops...... | 11.7 | 5.5 | 1.1 | 1.3 | 3.1 | 1.3 | 55.0 | 79.0 |
| Cocktail lounges, bare and nightclubs. | 22.6 | 2.5 | 1.6 | 3.0 | 2.1 | 2.2 | 38.4 | 91.4 |

Because of the prevalence of eating and drinking places，the number and receipts of the different types of operation included in this classification are given for each province and for the larger urban centres or areas in Table 4.

4．－Number of Eating and Drinking Piaces and Receipts，by Province，Metropolitan Area，
Nore．－Urban centres are designated in this table by the following abbreviations：m．$=$ metropolitan ares，
a $=$ major urban area and $\mathrm{c} .=$ urban centres of 30,000 or more population．

| Province and Area | Eating | Eating <br> Places with Alcoholic Beverages | Eating <br> Places with Other Mer－ chandise | Reiresh－ trent Booths and Stands | Fish and Chip | Cocktail <br> Lounses， Bars and Night－ elubs | Taverns， Beverage Rooms， Publie Housea | Total ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{array}{r} 145 \\ 3,591 \\ 44 \\ 1,882 \end{array}$ | 27 | 72 1.823 19 530 | 19 161 $9 \quad 1$ | $2^{2}$ | 20 1.438 5 481 | 64 4,079 24 1,089 | $\begin{array}{r} 342 \\ 11.793 \\ \mathbf{9 6} \end{array}$ |
| Prince EdwardIsland． $\quad$No． <br> $\$ 000$ | 50 1,547 | 二 | 16 793 | 21 | 2 | 二 | － | 72 2,408 |
| Nova Seotia．．．．．．．No． | 389 | 5 | 157 | 47 | 17 | 4 | 34 | 681 |
| Nova Seotia．．．．．．．． $\mathbf{8}^{\mathbf{\prime} 090}$ | 12，974 | 604 | 4，464 | 719 | 286 | 176 | 3，289 | 26，224 |
| Halifax，m，．．．．．．．No． | 5， 110 |  | 43 | 10 | ${ }^{9}$ | 2 | 13 | 190 |
| Haliax，m，．．．．．． $\mathbf{\$}^{\prime} 000$ | 5，051 | 2 | 1，687 | 392 | 134 | 2 | 1，722 | 12.250 |
| Sydney－Glace No． <br> Bay，u． $\$ 000$ | $\begin{array}{r} 43 \\ 1,568 \end{array}$ | 21 |  |  |  |  | 1.19 1,446 | 80 3,421 |
| New Brunswick．．．．．No． | 299 | － | 127 | 48 | 11 |  | 1 | 10 |
| New ${ }^{\prime} 000$ | 9，409 | $\cdots$ | 4，013 | 382 | 134 |  |  | 14，888 |
| Saint John，m．．．．．No． |  |  | 20 | 4 | 6 | － | － |  |
| Sols ${ }^{\prime} 000$ | 2，508 | － | 895 | 75 | 86 | －． | － | 42 |
|  | 29 1,655 | － | 10 | 11 | － | $\cdots$ |  | 2，4887 |
| Quebec．．．．．．．．．．．．．No． | 4，600 | 177 | 2，186 | 288 | 40 | 130 | 617 | 8.187 |
| Qubee．${ }^{\prime} 000$ | 161，863 | 31，246 | 60，974 | 3.558 | 483 | 14．150 | 37，432 | 321， 126 |
| Chicoutimi－No． |  | ${ }^{6}$ | 27 |  |  | ， |  | ， 104 |
| Jonquière，a．\％＇000 | 1，908 | 599 | 813 | 19 |  | － | 3 | ${ }^{3} 4$ |
| Drummondville，u．No． | ${ }_{7} 22$ |  | 18 | 22 | 二 | － | $11{ }^{3}$ | 1，451 |
| Granby，c．．．．．．．．${ }^{\mathbf{\$}+000}$ No． | 717 27 |  | 374 11 |  | 二 | － | 117 | 1，951 |
| Granby，c．．．．．．．． | 959 | 468 | 262 | 98 | 二 | 二 | 105 | 1，891 |
| Montreal，m．．．．．．．No． | 2.187 | 89 | 958 | 70 | 17 | 48 | 333 | 3，746 |
| （ ${ }^{\prime} 000$ | 96，398 | 20，936 | 34，993 | 2，394 | 288 | 7，901 | 23.527 |  |
| Quebec，m．．．．．．．．No． | 1270 |  | ．93 | 16 | $=$ | 1.5 |  | 521 |
| Qheme | 12，760 | 6，210 | 8，158 | 88 | 二 | 1.117 | 3，139 |  |
| Sbawinigan，u．．．．${ }_{\mathbf{8}}$ No． 000 | $\begin{array}{r} 50 \\ 1,406 \end{array}$ | 22 | 274 | 2 | － |  | 17 589 | 2，359 |
| Sherbrooke，u．．．．No． |  |  | 29 | － | － | 2 | 1 | 99 |
| －${ }^{\prime} 000$ | 2，312 |  | 1，302 | － | － | ： | ＊ 5 | 4，116 |
| St．Jean，u．．．．．．．．No．No． |  |  | 25 559 |  | － | － | 5 | 67 2,467 |
| Trois－Rivières，u．${ }_{\text {No }}$ No． | 1，114 |  | 559 29 |  | 1 |  | 227 12 | 2，667 |
| Trois－Rivieres，u．． $\mathbf{\$}^{\mathbf{N}} \mathbf{0} 000$ | 1，923 | 638 | 1，247 | 21 | 1 | 582 | 860 | 5，164 |
| Valleyfield，u．．．．．No． | － 24 |  | 10 261 | 3 | 二 | 二 | $:^{2}$ | －1，225 |
| Ontario．．．．．．．．．．．．．${ }^{\text {No．}}$ |  |  |  |  |  |  |  | 7，099 |
| Ontario．．．．．．．．．．．．．．$\$^{\prime} 0000$ | 179，536 | 21，321 | 72，664 | 4，489 | 5，081 | 3，862 | 42，754 | 380，076 |
| Belleville，c．．．．．．No． |  | － |  | － | 1 | － |  | 3 |
| Bell $\$ 000$ | 1，031 | － | 376 | － | 2 | － |  | 1，546 |
| Brantiord，4．．．．．．No． |  | 二 | 78 |  |  |  | 22 | 2，${ }^{514}$ |
| Cornwall，c．．．．．．．${ }_{\text {¢ }}$ No．${ }^{\text {Nom }}$ | 1，343 | － | 772 13 | 2 | 95 2 |  | 24 | 2，449 |
| Cormvalh，c．．．．．．${ }^{\text {r }}$ ， 000 | 928 | － | 313 | ， |  |  | 380 | 1，831 |
| Fort William－No． |  | $\begin{array}{r} 6 \\ 539 \end{array}$ | 27 575 | ${ }_{91}^{4}$ | 二 |  | 4 398 | 118 |
| Port Arthur，u．$\$ 000$ Guelph，u．．．．．．．．．．No． | 3， 459 | 538 | 19 19 | $-91$ | － 2 | － | 388 | 45 |
| Gaelph， | 779 |  | 832 | － |  | 4 |  | 2，100 |
| Hamilton，m．．．．．． $\begin{gathered}\text { No．} \\ \$ \mathbf{N}, 00\end{gathered}$ | $\begin{array}{r} 236 \\ 10,428 \end{array}$ | $2.14$ | $\begin{array}{r} 87 \\ 3,410 \end{array}$ |  | $\begin{array}{r} 42 \\ 419 \end{array}$ |  | $\begin{gathered} 44 \\ 4,646 \end{gathered}$ | 45 |

For tootnotes，see end of table．

## 4.-Number of Eating and Drinking Places and Receipts, by Province, Metropolitan Area, Major Urban Area and Other Urban Centres of $\mathbf{3 0 , 0 0 0}$ or More Population, Census 1961 -concluded.



[^286]
## Subsection 2.-Intercensal Surveys of Wholesale, Retail and Service Establishments

## Wholesale Trade

Total sales of wholesalers, estimated from the results of intercensal sample surveys, have increased continuously for several years, the amount in 1965 being $\$ 12,170,000,000$. As shown in Table 5, all business groups reported incresses over 1964. These estimates represent only the sales of wholesalers proper, operations of agents and brokers or manufacturers' sales branches being excluded.

## 5.-Wholesale Sales, by Kind of Business, 1961-65

Nore.-Includes only wholesatere proper, i.e., firms periorming the function of buying merchandise on their own account for resale.

| Kind of Buginess | 1961 | 1962 | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 | \$ 1000,000 |
| Freah fruits and vegetables. | 289 | 308 | 321 | 348 | 384 |
| Groceries and fond specialties | 1,75! | 1,863 | 1,982 | 2,092 | 2,235 |
| Meat and dairy products.. | 175 | 174 | 179 | 190 | 222 |
| Clothing and furniahinga. | 117 | 103 | 105 | 112 | 116 |
| Footwear. | 39 | 41 | 42 | 44 | 47 |
| Other textile and cothing accessories | 206 | 208 | 212 | 228 | 231 |
| Drugs and drug sundries. | 236 | 248 | 263 | 288 | 317 |
| Household electrical appliances. | 200 | 210 | 212 | 233 | 261 |
| Farm machinery. | 68 | 71 | 83 | 100 | 115 |
| Coal and coke. | 141 | 140 | 152 | 155 | 357 |
| Hardware. | 351 | 357 | 358 | 391 | 393 |
| Construction materials and supplies including lumber. | 798 | 780 | 888 | 932 | 982 |
| Industrial and transportation equipment and supplies....... | 750 | 776 | 825 | 973 | 1,106 |
| Commercial, institutional and service equipment and supplies. | 140 | 139 | 142 | 150 | 164 |
| Automotive parts and accessories. | 414 | 441 | 455 | 460 | 494, |
| Newsprint, paper and paper products. | 292 | 309 | 335 | 371 | 391 |
| Tobacco, conlectionery and soft drinks | 770 | 796 | 809 | 828 | $8{ }^{813}$ |
| Other................................ | 2,373 | 2,676 | 2,885 | 3,136 | 3,693 |
| Totals, All Trades | 9,037 | , 641 | 10,135 | 11,029 | 12.170 |

## Retail Trade

The trend of retail trade is one of the best general indicators of the economic condition of the country. It is through retail stores that most goods are ultimately sold and such sales reflect the financial strength of the consumer except in times of short supply. The value of retail sales, estimated from intercensal sample surveys, increased by 51 p.c. during the period 1956-65. Estimates, by province and by kind of business, for 1961-65, not adjusted for price changes, are shownjin, Table 6.

## 6.-Retall Trade, by Province and by Kind of Business, 1961-65

| Province | 1891 | 1962 | 1963 | 1964 | 1985p |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ 0000,000 | \$'000,000 | \$'000,000 | 8 '000,000 | \%'600.000 |
| Atlantic Provinces. | 1.465 | 1,521 | 1,594 | 1,701 | 1,817 |
| Quebec. | 4,183 | 4,571 | 4,841 | 5,076 | 5,423 |
| Ontario. | 6,340 | 6,641 | 7,016 | 7.407 | 8,018 |
| Manitobs. | 817 | 880 | 915 | 971 | 1,007 |
| Saskatchewan. | 905 | 968 | 1,058 | 1,154 | 1,239 |
| Alberta. | 1,401 | 1,492 | 1.578 | 1,664 | 1,776 |
| British Columbial | 1,665 | 1.797 | 1,911 | 2,096 | 2,312 |
| Canadaz. | 16,777 | 17,871 | 18,910 | 20, 068 | 21,531 |

For iootnotes, see end of table.
6.-Retail Trade, by Province and by Kind of Business, 1561-65-concluded

| Find of Business | 1961 | 1062 | 1963 | 1964 | 1965p |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000,000 | \$ 000,000 | \$'000,000 | \$'000,000 | \$000,000 |
| Grocery and combination atores. | 3,581 | 3,754 | 3,987 | 4,141 | 4,378 |
| Other food and beverage stores. | 1,244 | 1,344 | 1,422 | 1,502 | 1,854 |
| General stores. . . . . . . | 654 | 678 | 705 | 741 | 776 |
| Department stores. | 1,503 | 1,563 | 1,649 | 1,801 | 1,911 |
| Veriety etores. | 871 | 391 | 408 | 459 | 521 |
| Motor vebicle dealèrs | 2,488 | 2.741 | 3,034 | 3,277 | 3,709 |
| Garages and filling stations. | 1,212 | 1,306 | 1,364 | 1,425 | 1,500 |
| Men's clothing stores... | 261 | 281 | 303 | 322 | 343 |
| Family clothing stores.. | 243 | 252 | 257 | 272 | 298 |
| Women's clothing stores | 283 | 297 | 808 | 324 | 345 |
| Shoe stores...... | 170 | 180 | 182 | 184 | 196 |
| Hardware stores. | 328 | 331 | 345 | 365 | 391 |
| Lamber and building material des | 426 | 452 | 473 | 511 | 523 |
| Furniture, appliance and radio dea | 548 | 573 | 590 | 622 | 664 |
| Reetaurants...... | 573 | 612 | 640 | 660 | 695 |
| Fuel dealers.. | 317 | 360 | 364 | 352 | 362 |
| Drug stores. | 428 | 442 | 460 | 481 | 515 |
| Jewellery atores. | 134 | 138 | 145 | 153 | 168 |
| Miscellaneous.. | 2,012 | 2,176 | 2.324 | 2,474 | 2,640 |

${ }^{1}$ Inclades the Yukon and Northwest Territories. because of rounding of the figures.
${ }^{2}$ Totals are not the exact addition of the comp,nents

Farm Implement Sales.-The value, at wholesale prices, of new farm implements and equipment sold in 1964 amounted to $\$ 326,976,000$, an increase of 13.6 p.e. over the value of such sales in 1963. Increases occurred in all regions except Quebec and in all major groups of implements except haying machinery and miscellaneous farm equipment. In addition to the amount spent on new machinery, $\$ 53,156,000$ was spent in 1964 for repair parta, 6.9 p.c. more than in 1963.
7.-Sales of Farm Implements and Equipment, by Province and by Major Gronp, 19c0-64
(Values at wholesale prices)

| Province and Major Groap | 1960 | 1961 | 1962 | 1963 | 1964 | Percentage Change 1963-64 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Frorince | \$000 | \$ 000 | \$ 000 | \$000 | \$'000 |  |
| Atlantic Provinces. | 7,603 | 8,195 | 6.722 | 6,712 | 8.044 | +19.8 |
| Quebec. | 26,792 | 30,277 | 32.555 | 35,083 | 32,633 | -6.9 |
| Ontario | 49,399 | 51,006 | 50,886 | 69,769 | 69,395 | +16.1 |
| Manitoba | 25,877 | 18,958 | 28,054 | 35, 816 | 45,230 | +25.9 |
| Saskatchewa | 57,359 | 41,615 | 59,348 | 88.686 | 96,366 | +18.6 |
| Alberta.... | 44,993 | 45,723 | 55,294 | 61,830 | 68, 149 | +10.0 |
| British Columbis | 5,352 | 6,033 | 5,938 | 5,783 | 7,169 | +24.0 |
| Totals | 217,485 | 201,77\% | 238,797 | 287,839 | 336,976 | +13.6 |
| Major Group |  |  |  |  |  |  |
| Tractors and engines........................... | 80,093 | 74.764 | 80,631 | 97,678 | 114,067 | $+16.8$ |
| Ptoetighe. | 11,635 | 11,440 | 10,969 | 12,934 | 15,877 | +22.8 |
| Tilling, cultivating and weeding machinery.... | 12,650 | 12,938 | 15,363 | ${ }^{18} 8.850$ | 21,106 | +18.9 |
| Planting, seeding and fertilizing machinery.... | 7, 3 , 873 | 8,224 | 9,477 | 11,380 | 14,447 | +27.0 |
| Haylog machinery. | 30,544 48,485 | 29,298 37,631 | 32,214 57,626 | 31,425 78182 | 30,867 85,645 | -1.8 |
| Machines for preparing crops for market or for use. | 6.291 | 6,233 | 7858 | 10,043 | 6, 6.4 | + |
| Farm wagons, wacon trucks and sleighs ${ }^{\text {a }}$........ | 2,025 | 6,233 | 7,770 | 10.043 2,610 | 11,313 3,571 | +12.8 +36.8 |
| Bars equipment. . . . . . . . . . . | 4,095 | 4,535 | 5,892 | 6.289 | 7,268 | +15.6 |
| Dairy machinery mad equipmentz | 5.766 | 5,589 | 5,62t | 4,993 | 9,342 | +87.1 |
| Spraying and duating equipment . . . . . . . . . . . | 1,637 | 1,758 | 1,828 | 2.271 | 2,439 | + 7.4 |
| Miscellaneous farm equipment................. | 8.401 | 7,436 | 9.748 | 11,084 | 11,034 | $-7.9$ |

[^287]New Motor Vehicle Sales.-As the figures of Table 8 show, sales of new motor vehicles continue to climb each year, reaching a peak of 830,995 vehicles valued at $\$ 2,739,329,000$ in 1965.
8.-Retail Sales of New Motor Vehicles, 1956-85

| Year | Paseenger Cars |  | Trucks and Buses |  | Totals |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | $\leqslant$ | No. | \$ | No. | \$ |
| 1958. | 408.233 | 1,128,640,000 | 91,688 | 326,735,000 | 499,921 | 1,455,375,000 |
| 1957. | 382.023 | 1,087,620,000 | 76,276 | 281,311,000 | 458,289 | 1,368,931,000 |
| 1958. | 376.723 | 1,110.724,000 | 68,046 | 254,712,000 | 444,769 | 1,305,466,000 |
| 1959. | 425.038 | 1,240,961,000 | 77.588 | 299, 207,000 | 502,626 | 1,540,168.000 |
| 1960. | 447,771 | 1,289,073,000 | 75,417 | 285,754,000 | 523,188 | 1,574,827,000 |
| 1961. | 437,319 | 1.290.026,000 | 74,160 | 251,382,000 | 511.479 | 1,551,408,000 |
| 1962 | 502, 565 | 1, 482.407.000 | 82, 645 | 300,509,000 | ${ }^{585}, 210$ | 1,782,916.000 |
| 1963 | 557.787 | 1,716. 121.000 | 67,202 | 315,918,000 | 654,989 | 2,062,039.000 |
| 1964 | 616,759 | 1,936,258,000 | 109, 120 | 401, 544,000 | 725,879 | 2,337,802,000 |
| t965p | 708,718 | 2,267,314,000 | 122,278 | 472,015,000 | 830,995 | 2,739,329,000 |

Sales Financing.-The amount of instalment financing transacted by sales finance companies reached a record level in 1964, paper purchased and balances outstanding being higher than in 1963 for every type of goods with the exception of paper purchased for used commercial vehicles, which remained unchanged.

## 9.-Retail Instaiment Paper Purchased and BaIances Outstanding, by Class of Goods, 1960-64

(Millions of dollars)

| Class of Goods | Paper Purchased |  |  |  |  | Balances Outstanding Dee. 31- |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1980 | 1061 | 1962 | 1963 | 1964 | 1960 | 1961 | 1962 | 1963 | 1964 |
| Consumer Goods. | 878 | 765 | 851 | 925 | 1,059 | 8\% | 356 | 801 | 874 | 1,035 |
| New passenger cars. | 378 | 330 | 381 | 442 288 | \$11 | 625 | 569 | 609 | 687 | 809 |
| Used passenger cars............... | 298 | 250 | 265 | 288 | 319 | 6 | 5 |  |  |  |
| Radio and television sets, household appliances, furniture and other. | 202 | 188 | 205 | 195 | 229 | 204 | 187 | 192 | 187 | 226 |
| Commercial and Industrial. | 366 | 344 | 878 | 420 | 478 | 398 | 395 | 440 | 513 | 586 |
| New commercial vehicles........) | 97 | 87 | 94 | 108 | 123 | 151 | 138 | 151 | 170 | 197 |
| Used commercial vehicles......... | 57 | 47 | 49 | 51 | 51 | 12 | 188 | 150 | 349 | 389 |
| Other.......................... | 212 | 210 | 235 | 261 | 303 | 242 | 257 | 289 | 349 | 389 |
| Totals ${ }^{\text {r }}$ | 1,944 | 1,112 | 1,229 | 1,345 | 1,537 | 1,222 | 1,151 | 1,241 | 1,39\% | 1,*21 |

${ }^{1}$ Totals are not the exact addition of the componenta because of rounding of the figures.
Consumer Credit.-Total balances outstanding on credit extended to consumers by retail stores and certain financial institutions are increasing very rapidly. Although the financial institutions included in the survey do not cover all sources of consumer credit, returns from the selected holders indicate that balances outstanding on credit extended to individuals for the purchase of consumer goods and services have more than doubled since 1956. The figures in Table 10 do not include credit extended for commercial purposes.
10.-Balances Outstanding on Retail Trade Credit and Loans Extended to Individuals for Non-business Purposes by Certain Financial Institutions, 1956-65
(Millions of dollars)

| Year | Retail Trade Credit | Sales Finatice Compadies | Small <br> Loans Companies | Chartered Banbs | Credit Unions | Life Insurence Companies Policy Loans |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1956. | 873 | 756 | 356 | 748 | 226 | 270 |
| 1957. | 901 | 780 | 362 | 677 | 258 | 295 |
| 1958. | 937 | 768 | 401 | 840 | 320 | 305 |
| 1959. | 992 | 808 | 484 | 1,001 | 397 | 323 |
| 1960....... | 1,038 | 828 | 549 | 1,143 | 433 | 344 |
| 1961... | 1,088 | 756 | 594 | I, 366 | 516 | 358 |
| 1962.... | 1,125 | 801 | 714 | 1,555 | 579 | 372 |
| 1963... | 1,183 | 874 | 810 | 1, 824 | 691 | 385 |
| 1964... | 1,243 | 1,035 | 804 | 2,252 | 840 | 398 |
| 19650.. | 1,324 | 1,142 | 1,029 | 2,728 | -. | 407 |

Accounts outstanding on the books of retailers stood at $\$ 1,323,800,000$ at the end of 1965. Lumber and building material dealers and farm implement dealers, at one time included in these figures, have been omitted since 1958 so that the results now approximate more closely "consumer" credit.
11. -Retail Credit 1956-65, and by Kind of Business, 1965

| Year | Accounta <br> Receivable (at end <br> of period) | Kind of Business | Accounts Receivable (at end of period) |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Instalment | Charge | Total |
|  | \$ $\mathbf{*} 000,000$ |  | \$ 0000,000 | \$ 000,000 | \$ 0000.000 |
|  |  | 1965D |  |  |  |
| 1956...... | $981.5{ }^{1}$ | Department, stores.............................. |  |  | 564.8 |
| 1957..... | 1,014.2 | Motor vehicle.................................. | 19.8 9.2 | 108.8 | 128.6 24.7 |
| 1858.. | 937.2 | Men's clotbing. ....................................... | 9.2 13.0 | 15.5 13.9 | 24.7 26.9 |
| 1959.. | 992.5 | Women's clothing. | 4.4 | 12.7 | 17.1 |
| 1960. | 1,037.6 | Hardware..................... | 8.0 | 30.9 | 38.9 |
| 1981. | 1,088.2 | Furniture, appliance and radio. | 175.9 | 32.9 | 208.8 |
| 1962. | 1,125.1 | Jewellery............................ | 15.7 | 10.9 | 26.6 |
| 1863. | 1,182.8 | General stores................................... | .. |  | 40.6 |
| 1964. | 1,242.6 | Fuel.......... | 4.1 | \$8.9 | 63.0 |
| 1965. | 1,323.8 | Garages and filling stations..................... | 30.5 | 85.2 | 31.1 115.7 |
|  |  | Totals, All Trades. . . . . . . . . . . . . . . . | . | $\cdots$ | 1,3\%马.8 |

1 Includes lumber and farm implement deaters (see preceding tert).

## Service Establishments

Motion Picture Theatres.-The receipts of motion picture theatres reached a peak in 1953 when they amounted to $\$ 106,752,281$; since then they declined each year to $\$ 67,748,000$ in 1962 but rose to $\$ 71,641,505$ in 1963 and $\$ 78,347,715$ in 1964 . The number of regular theatres in operation continues to decrease although drive-ins show some advance in both number and receipts.

## 12.-Summary Statistics of Motion Picture Theatre Operations, 1963 and 1964

| Item | 1963 |  |  | 1964 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Regular <br> Theatres | Drive-in Theatres | Total | Regular <br> Theatres | Drive-in Theatres | Total |
| Establishments............. No. | 1,245 | 241 | 1,486 | 1,209 | 242 | 1,451 |
| Receipts (excluding taxes)...... \$ | 63,816,752 | 7,824,753 | 71,641,505 | 69,324,744 | 9,022,971 | 78,347,715 |
| Amusement taxes.............. \$ | 4,370,712 | 396,002 | 4,766,714 | 4,594,779 | 407,528 | 5,002,307 |
| Paid admissions. . . . . . . . . . . No. | 87,966,686 | 9,921,586 | 97,888,272 | 90,913,288 | 10,814,447 | 101,727,735 |

Motion Picture Production.-In 1964 there were 71 private firms producing and printing motion picture films and filmstrips for industry, government, education, entertainment, etc. These firms employed 953 persons, paid out $\$ 4,356,119$ in salaries and wages and had a gross revenue of $\$ 12,694,301$. Films were also produced by government agencies but operating information concerning such production is not available. In addition, 12 firms in other business categories produced films in 1964 (44 entertainment and documentary films for television use, nine non-theatrical films, 62 commercial advertising films for television, one commercial advertising film for theatre use, one silent motion picture film and 69 other films). This production brought in revenue amounting to $\$ 120,999$.

Table 13 shows types of film produced by private industry, classified by major producing region, and by government agencies during 1964. Altogether, these agencies produced $65,619,923$ feet of 16 mm . film in black and white, $12,532,685$ feet of 16 mm . film in colour, $18,408,173$ feet of 35 mm . film in black and white and $1,593,686$ feet of 35 mm . film in colour.
13.-Private Industry and Government Motion Picture Production, by Type of Film, 1964

| Type | Private Industry |  |  |  | Government | Private and Government |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Quebec | Ontario | Other Provinces | Total |  |  |
|  | No. | No. | No. | No. | No. | No. |
| Films in English or French. | 1,250 | 5,052 | 464 | 6,766 | 653 | 7,419 |
| Theatrical features, 60 minutes or longer.. | 20 | 3 | - | 28 | 8 | 56 |
| Theatrical shorts, less than 60 minutes...... | 20 | 8 | 18 | ${ }^{28}$ | 28 | 56 272 |
| Television entertainment................. | 174 57 | 80 | 18 1 | ${ }_{124}^{272}$ | -79 | $\stackrel{272}{203}$ |
| Television, information or documentary... Non-theatrical (also non-television) motion | 57 | 66 | 1 | 124 | 79 | 203 |
| pictures | 23 | 136 | 78 | 237 | 130 | 367 |
| Silent motion pictures...................... | 7 | 94 2,419 | 108 138 | 209 2.824 | 25 2 | 2,826 |
| Television commercials (two minutes or less) Theatre commercials (two minutes or less). | 1267 | 2,419 241 | 138 | $\begin{array}{r}2,824 \\ \hline 252\end{array}$ | 2 | 2,826 252 |
| Other (newsreels, newsclips, trailers, titles, production services, etc.) | 691 | 1,977 | 121 |  | 318 | 3,107 |
| Silent filmstrips (slide films)............... |  | ${ }_{2}$ | - | ${ }_{26}^{2}$ | 68 | 70 |
| Sound filmstrips (slide films) with records.. | - | 26 | - | 26 | - | 26 |
| Films in Other than English or French | 67 | 2 | - | 69 | 82 | 151 |

Advertising Agencies.-Table 14 records the growth of business done by advertising agencies during 1964 as compared with the four previous years.

## 14.-Summary Statistics of Advertising Agencies, 1960-64

| Item | 1960 | 1961 | 1962 | 1963 | 1964 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Billings. . . . . . . . . . . . . . . . . . . . . . | 272,739,803 | 282, 661,449 | 298,584,954 | 302,851,514 | 818,140.339 |
| Commissionable billings.......... | 267,756, 158 | 277, 805,883 | 295,088,081 | 296,762, 297 | \$1t, 8989.070 |
| Other............................. . | 4.983, 646 | 4,755,486 | 5,658,999 | 6,089,217 | 6,808,269 |
| Gross revenue. . . . . . . . . . . . . . . . . \% | 45,150,389 | 48,089,647 | 49,348,113 | 50, 465,061 | 53,591,932 |
| Distribution of Billinge- |  | 45.5 | 44.0 | 42.2 | 40.4 |
|  | 18.7 | 19.0 | 17.2 | 42.2 | 18.4 |
| Radio.......................... | 9.7 | 9.4 | 10.8 | 10.7 | 10.5 |
| Television...................... ${ }^{\text {a }}$ | 19.3 | 21.4 | 22.8 | 26.3 | 26.7 |
| Other visusl..................... "A | 5.1 | 4.6 | 5.1 | 4.6 | 3.9 |
| Other. . . . . . . . . . . . . . . . . . . . . . ${ }^{\text {* }}$ | * | 0.1 | 0.1 | - | 0.1 |

Hotels.-In 1964 there were 4,976 hotels in operation in Canada, 4,407 of them full-year hotels and 569 seasonal. Table 15 shows the provincial distribution of these establishments, together with the sources of their revenue for 1964, with totals for 1958-64.
15.-Hotels and Their Receipts, by Source 1958-64, and by Province, 1964

| Year and Province or Territory | Hotels | Rooms | Receipts |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Rooms | Meala | Beer, Wine and Liquor | $\stackrel{\text { All }}{\text { Other }}$ Sources | Total ${ }^{1}$ |
|  | No. | No. | \$ 000 | \$ 600 | \$ 000 | \$ 000 | \$ ${ }^{\prime} 00$ |
| 1958. | 5,088 | 151,362 | 111,174 | 87,550 | 243,695 | 37,876 | 480,295 |
| 1955. | 5,269 | 154,725 | 117,396 | 95, 139 | 264.087 | 49,861 | 517,483 |
| 1080 | 5,294 | 155,538 | 120.890 | 98,641 | 283,223 | 42.703 | 543,457 |
| 19662. | 3,123 4,983 | 159,674 152,467 | ${ }^{1350.077}$ | 1194, 3024 | 285,125 295,868 | 48,537 43,764 | 567, 762 $\mathbf{5 8 7 , 8 8 9}$ |
| 1963. | 4,787 | 160,687 | 141. 264 | 122,165 | 314,027 | 45,144 | 622.601 |
| 1964. | 4,876 | 155, 657 | 157,381 | 139,281 | 341,407 | 48,687 | 686,756 |
| Province, 1964 |  |  |  |  |  |  |  |
| Newfoundtand. | 70 | 1,418 | 1,963 | 1,378 | 2,675 | 408 | 8,423 |
| Prince Edward Island | 14 | , 478 | . 530 | 392 | \% | $:$ | 1,028 |
| Nova Scotis.. | 94 | 3,317 | 4.081 | 2,409 | 1,231 | 896 | 8,617 |
| New Brunswic | ${ }^{66}$ | 2,581 | 2,650 | 1,570 |  |  | 5,568 |
| Ontario. | 1,745 | 46,696 44,519 | 43,455 50 | 38,254 <br> 49 <br> 827 | 84,277 | 11,690 | 177,676 |
| Manitoba | 277 | 8,228 | 7,568 | 6,865 | 35, 808 | 3,714 | 53,952 |
| Saskatchewan, | 432 | 10,234 | 6,584 | 5,454 | 33,925 | 3,209 | 49,172 |
|  | 455 | 18,126 | 15,462 | 11,448 | 37, 835 | 6.491 | 71,236 |
| weat Territories. | 542 | 22,213 | 24,302 | 21,685 | 50,329 | 6.936 | 103,252 |

[^288][^289]
# Section 2.-The Marketing of Agricultural Products 

Subsection 1.-The Grain Trade, 1964-65

At Aug. 1, 1964, stocks of the five major Canadian grains (wheat, oats, barley, rye and flaxseed) amounted to $770,721,000$ bu., compared with stocks of $734,919,000 \mathrm{bu}$. at Aug. 1, 1963. However, total production of these grains was estimated at $1,156,951,000$ bu. in 1964 , some 19 p.c. less than the 1963 level of $1,431,172,000$ bu., so that total estimated domestic supplies amounted to $1,927,831,000$ bu. in 1964-65, compared with $2,166,294,000$ bu. in the previous season.

Marketings in the Prairie Provinces during the crop year 1964-65 amounted to $664,686,000$ bu., 10 p.c. below the $1963-64$ level of $735,653,000$ bu. but 20 p.c. above the ten-year (1953-54-1962-63) average of $555,092,000 \mathrm{bu}$. Reflecting smaller shipments of wheat, wheat flour, oats, barley and rye, total exports of the five major grains and their products, at $471,382,000$ bu., were some 31 p.c. lower than the $1963-64$ record figure of $679,381,000$ bu., but 17 p.c. above the ten-year average of $404,185,000$ bu. Although decreases were recorded for both exports and domestic use, total disappearance of these grains more than offset the 1964 production and, as a result, carryover stocks at July 31, 1965 amounted to $747,364,000$ bu., a decrease of 3 p.c. from the $770,721,000$ bu. at July 31, 1964.

Marketings of wheat, oats and barley continued under the compulsory crop-year pools system of the Canadian Wheat Board. As in 1963-64, an initial quota of 100 units was in effect at local delivery points at the beginning of the marketing year. Permit holders were entitled to deliver a maximum of 300 bu . of wheat or 800 bu . of oats or 500 bu . of barley or 500 bu . of rye or any combination of these grains which, when calculated on a unit basis, did not exceed 100. The initial unit quota was followed by general quotas based upon bushels per specified acre; specified acreage consisted of each permit holder's acreage seeded to wheat (including Durum), oats, barley and rye, the summer fallow acreage and the acreage seeded to eligible grasses and forage crops. The crop year commenced with the initial quotas in effect at all delivery points. The first general quotas were established in early September and were extended and increased as local country elevator space became available.

Flaxseed was placed on a delivery quota of the larger of 5 bu . per seeded acre or 200 bu .; this quota was increased on Sept. 21 to 10 bu. per seeded acre or 400 bu . and on Dec. 7 the quota was declared open for the remainder of the 1964-65 crop year. Rapeseed was placed on an initial delivery quota of the larger of 5 bu. per seeded acre or 200 bu.; on Oct. 26 the quota was increased in Manitoba and Saskatchewan to the larger of 10 bu. per seeded acre or 400 bu . and in Alberta to the larger of 8 bu . per seeded acre or 325 bu .; on Dec. 7 the quota was declared open in Manitoba and Saskatchewan, and in Alberta it was increased to the larger of 10 bu . per seeded acre or 400 bu ; on Dec. 21 the quota in Alberta was also declared open. Rye, which was contained in the specified acreage, was placed on a supplementary quota of the larger of 5 bu. per seeded acre or 200 bu. on Jan. 11, 1965, and as of Apr. 12 the delivery quota was declared open. A number of supplementary delivery quotas were established on oats and barley.

Stocks of grain in store at country and terminal elevators at Aug. 1, 1964 amounted to $458,331,000$ bu., some $89,178,000$ bu. less than at the same date of 1963 . The space in commercial positions at the beginning of the 1964-65 crop year, combined with a good export movement, permitted a steady advance in delivery quotas even though large volumes of grain were being marketed at each quota level. Although a considerable portion of the 1964 crop had been harvested in a high moisture condition, the rapid movement required
to meet the fall shipping program did not permit preference to the movement of this grain until the close of navigation on the Great Lakes. On Dec. 7, the Canadian Wheat Board authorized delivery of wheat, oats, barley and rye having a moisture content of 15.7 p.c. and over, up to 4 bu . per seeded acre in excess of established quotas, provided such deliveries, when added to those already made under authorized quotas, did not exceed 6 bu . per specified acre.

In order to provide stocks of wheat required to meet export commitments and anticipated sales, the Board authorized two supplementary quotas for wheat, other than Durum, during the last half of the crop year. In opening these supplementary quotas, the Board initially gave preference to the delivery of wheat with a moisture content of 15.7 p.c. and over. The first supplementary quota was authorized on Feb. 1, 1965, and permitted delivery at all points of high-moisture wheat, other than Durum, up to the larger of 4 bu. per seeded acre or 200 bu. After Feb. 15, as space became available in excess of that required for delivery of the 6 bu . per specified acre quota, the $\mathbf{4}$ bu. supplementary quota was amended to allow the delivery of wheat regardless of moisture content. On Apr. 13 a second supplementary quota of the larger of 5 bu. per seeded acre or 200 bu. was authorized for high-moisture wheat, other than Durum; this was extended to wheat regardless of moisture, by station, as space became available in excess of that required to complete the 6 -bu. general plus 4-bu. supplementary quotas. By the end of the crop year these amended supplementary quotas had been gradually extended to all delivery points in Western Canada, i.e., 6-bu. general plus 9-bu. supplementary (except Durum).

Wheat.-Domestic supplies of wheat for the 1964-65 crop year totalled $1,059,874,000$ bu., an amount 12 p.e. below the $1963-64$ figure of $1,210,692,000$ bu. and 8 p.c. less than the 1956-57 record total of $1,152,162,000$ bu. Both the 1964 production of $600,424,000$ bu. and the carryover stocks of $459,440,000$ bu. registered decreases from the 1963 levels of $723,442,000$ bu. and $487,247,000$ bu., respectively. Exports of wheat and flour, in terms of wheat, amounted to $399,594,000$ bu., a figure sharply below the all-time high of $594,548,000 \mathrm{bu}$. exported in the preceding year but higher than both the ten-year average of $301,841,000 \mathrm{bu}$. and the long-term average of $262,241,000 \mathrm{bu}$. Domestic disappearance of wheat was $147,256,000 \mathrm{bu}$. compared with $156,704,000 \mathrm{bu}$. in 1963-64. Total disappearance, amounting to some $546,850,000$ bu., was considerably less than the 1964 production and, as a result, carryover stocks at July 31, 1965 were $513,024,000$ bu. compared with $459,440,000$ bu. at the same date of 1964.

Initial payment for Western Canadian wheat in the 1964-65 crop year was $\$ 1.50$ per bu., basis No. 1 Northern in store Fort William-Port Arthur or Vancouver. There were no adjustment or interim payments on the 1964-65 wheat pool but on Feb. 25, 1966, the final payment was announced. Producers delivered $523,703,000$ bu. of wheat, including $31,030,000 \mathrm{bu}$. of Durum; this was the third largest volume of wheat ever delivered by producers to the Board in a crop year. The amount of the final payment distributed to producers was $\$ 200 ; 107,000$;- of which $\$ 12,281,000$ was distributed to producers of Durum wheat. After deducting the 1-p.c. Prairie Farm Assistance Act levy, the average final payment on Spring wheat (other than Durum) was 38.124 cents per bu. and that on Durum was 39.579 cents per bu. The tótal payment for No. 1 Northern, basis in store Fort William-Port Arthur or Vancouver and prior to deduction of the PFAA levy, amounted to $\$ 1.88683$ per bu.


The crop year 1964-65 coincided with the third year of the fifth three-year International Wheat Agreement, which became effective Aug. 1, 1962. Sales under the Agreement continued to be quite widely distributed, with 27 of the 38 importing countries included in the pact purchasing wheat and/or flour from Canada. Purchases of Canadian wheat and flour under the terms of the IWA amounted to the equivalent of $207,603,000 \mathrm{bu}$. during 1964-65 and accounted for 35 p.c. of the total sales under the Agreement. Britain was the leading IWA market for Canadian wheat and flour, shipments to that country amounting to some $80,148,000$ bu., followed by Japan taking $50,172,000$ bu.; the Federal Republic of Germany, $20,509,000$ bu.; Belgium and Luxembourg, $15,672,000$ bu.; Cuba, $14,745,000$ bu.; Venezuela, $9,123,000$ bu.; India, $7,266,000$ bu.; and the Philippines, $6,483,000 \mathrm{bu}$. The leading markets for Class II wheat and flour in 1964-65 were: Communist China, $62,370,000$ bu.; Czechoslovakia, $26,245,000$ bu.; Poland, 18,899,000 bu.; East Germany, $10,522,000$ bu.; and U.S.S.R., $10,199,000$ bu. During 1964-65, domestic sales of all classes of wheat were made at the same prices as those prevailing for wheat sold under the IWA. Class II prices for all grades of wheat coincided with the IWA and domestic quotations.

Other Grains.-The supply and disposition of the major Canadian grains for the crop years 1963-64 and 1964-65 are shown in Table 16.

The initial payment for oats in $1964-65$, basis No. 2 C.W. in store Fort William-Port Arthur, was 60 cents per bu., the same as in 1963-64; that for barley, basis No. 3 C.W. SixRow in store Fort William-Port Arthur, was 96 cents per bu., also unchanged from the previous year. No interim payments were made on either grain during the crop year and final payments on the oat and barley pools were announced on Mar. 17, 1966. On oats, the final surplus for distribution was some $\$ 6,850,000$ and, based on a total of $38,759,000 \mathrm{bu}$. delivered to the 1964-65 pool, averaged 17.674 cents per bu. after deducting the 1-p.c. PFAA levy. For barley, based on deliveries of $71,426,000 \mathrm{bu}$. and a final payment for producers of some $\$ 22,218,000$, the average final payment was 31,107 cents per bu. after deducting the 1-p.c. PFAA levy. Total prices, basis in store Fort William-Port Arthur, realized by producers for representative grades prior to the PFAA levy were: No. 2 C.W. oats, $\$ 0.77152$ per bu.; No. 1 Feed oats, $\$ 0.73064$ per bu.; No. 3 C.W. Six-Row barley, $\$ 1.26026$ per bu.; and No. 1 Feed barley, $\$ 1.18526$ per bu. Deliveries of rye and flaxseed in Western Canada amounted to $7,347,000$ bu. and $16,847,000$ bu., respectively.

Combined exports of oats, bagged seed oats, barley, rye and flaxseed (including exports of oatmeal and rolled oats, malt, pot and pearl barley and rye flour and meal in terms of grain equivalent) amounted to $71,787,000 \mathrm{bu}$. during $1964-65$, some 15 p.c. less than the 1963-64 exports of $84,834,000 \mathrm{bu}$. and 30 p.c. below the ten-year ( $1953-54-1962-63$ ) average. Exports of Canadian oats in bulk totalled 14,727,000 bu. compared with $17,532,000$ bu. shipped during 1963-64, the major markets being the Netherlands and the Federal Republic of Germany to which countries were shipped $5,201,000$ bu. and $3,981,000$ bu., respectively, compared with $8,410,000$ bu. and $1,791,000$ bu., respectively, the previous year. Other 1964-65 shipments went to the United States, 2,543,000 bu.; Italy, 1,170,000 bu.; Britain, 851,000 bu.; Belgium and Luxembourg, 514,000 bu.; and Ireland, $419,000 \mathrm{bu}$. In addition, exporte of oatmeal and rolled oats amounted to the equivalent of $435,000 \mathrm{bu}$. in 1964-65 compared with 711,000 bu. the year before.

Exports of barley as grain amounted to $32,738,000$ bu., 21 p.c. lower than in 1963-64. Most of the decline was accounted for by smaller shipments to Communist China, the United States and Czechoslovakia which countries received $2,005,000$ bu., $7,738,000$ bu. and no shipments, respectively, compared with $14,694,000$ bu., $8,675,000$ bu. and $3,022,000$ bu., respectively, in 1963-64. Higher shipments were made to Britain, Japan and Italy, which received, respectively, $9,832,000$ bu. compared with $9,546,000$ bu., $8,854,000$ bu. compared with $3,654,000$ bu., and $2,418,000$ bu. compared with no shipments in 1963-64. In addition, exports of Canadian barley as malt were the equivalent of $4,280,000$ bu. compared with $5,409,000$ bu. in 1963-64. Canadian malt was shipped to 24 different destinations, the major markets being: the United States, $1,403,000$ bu.; the Philippines, 604,009 bu.; Venezuela; 390,000 bu.; and Puerto Rico, 328,000 bu.

Exports of Canadian rye amounted to $4,857,000 \mathrm{bu}$. in 1964-65 compared with $5,501,000$ bu. in the previous year; the principal markets were the United States which took 2,487,000 bu. and Japan, $1,046,000$ bu. Clearances of Canadian flaxseed moving overseas during 1964-65 amounted to $14,346,000$ bu., 5 p.c. above the $13,638,000$ bu. shipped in 1968-64. Britain, taking $4,776,000$ bu, was the leading market followed by Japan with $4,051,000$ bu. and the Netherlands with $2,039,000$ bu. Exports of linseed oil were equivalent to about $1,336,000$ bu. of flaxseed, most of it going to Britain.

In addition to the exports of the five principal grains and their products, trade in rapeseed amounted to $9,276,000 \mathrm{bu}$. in 1964-65 compared with $5,308,000 \mathrm{bu}$. in 1963-64 and mustard seed exports were $1,239,000 \mathrm{bu}$., an amount slightly higher than the $1,070,000 \mathrm{bu}$. shipped the previous year.
16.-Supply and Disposition of Canadian Grain, Crop Years Ended July 31, 1964 and 1965
(Millions of bushels)

${ }^{1}$ Includes flour in terms of wheat, rolled oats and oatmeal in terms of oats, malt and pot and pearl barley in terms of barley, and rye flour in terma of rye. ${ }^{2}$ Fewer than 50,000 bu. wheat four in terms of wheat, bagged seed oats, rolled oats and oatmeal in terms of oats, malt and pot and pearl
barley in terms of barley, snd rye flour and meal in terma of rye. industrial use, loss in handling and animal feed.

## 17.-Production, Imports, Exports and Domestic Use of Wheat, Crop Years Ended July 31, 1964-65

(Millions of bushels)


[^290]Miscellaneous Grain Trade Statistics.-Grain Handled at Eastern Elevators.Total receipts of the five major grains at eastern elevators in the 1964-65 crop year amounted to $401,015,510$ bu., 20 p.c. less than in $1963-64$. Shipments totalled $360,388,327$ bu., 35 p.c. below the 1963-64 level.

## 18.-Canadian Grain Handled at Eastern Elevators, Crop Years Ended July 31, 1961-65

Nors.-Figures for the crop years ended 1922-60 are given in the corresponding table of previons Year Books bexinning with the 1031 edition.

| Item and Crop Year | Whest | Oats | Barley | Rye | Flaxseed | Total Grain |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | bu. | bu. | bu. | ba. | bu. | bu. |
| Eecelpts- |  |  |  |  |  |  |
| $\begin{aligned} & 1960-61 . . \\ & 1061-69 \end{aligned}$ | 283,713,889 | $32,686,125$ 18,252519 | $34,139.873$ 21.412 .213 | 1,305,521 | 6,010.008 | $357,855,416$ $293,089,724$ |
| 1966-63 | 244,953,618 | 30,096,077 | 21,431,674 | 3,692,938 | 7,786,039 | 307,960, 341 |
| 1983-64. | 425,500,798 | 34, 575, 280 | 31,431, 415 | 2,726,233 | 7,301,269 | 501,534,995 |
| 1964-65. | 332,054, 894 | 34, 379,472 | 26,523,625 | 1,846,451 | 5,911,068 | 401,015,510 |
| Shipments- |  |  |  |  |  |  |
| 1960-61. | 287,810,455 | 30,785, 810 | 31,288,234 | 1,200,616 | 6,086,235 | 357,171,351 |
| 1081-62 | 258,787,935 | 19,494,745 | 23, 530, 370 | 3,227, 310 | 7,098,689 | 312, 139, 049 |
| 1962-63. | 229, 459,107 | $29,294,945$ <br> 35,481 <br> 11 | $21,984,624$ 31,076 | 3, 432, 627 | 7,639,856 | $291,811,159$ 550 |
| 1963-64-65. | $474,419,208$ $292,152,053$ | $35,481,811$ $33,899,769$ | 31,076, <br> $\mathbf{2 6 , 5 2 0}$ | $2,658+662$ $1,641,919$ | $7,260,962$ $6,174,167$ | $550,896,888$ $360,388,327$ |

Lake Shipments of Grain.-The 1965 navigation season opened at the Canadian Lakehead on Apr. 20 and closed on Dec. 16. During the season, total vessel shipments of wheat, oats, barley, rye, flaxseed, rapeseed and buckwheat amounted to $410,298,000$ bu., 7 p.c. less than the $440,439,000 \mathrm{bu}$. shipped during the 1964 navigation season, which opened on Apr. 2 and closed on Dec. 14.

## 19.-Lake Shipments of Canadian Grain from Fort William-Port Arthur, Navigation Seasons 1964 and 1965

| Grain | 1964 |  |  |  | 1965 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { To } \\ \substack{\text { Canadian } \\ \text { Porta }} \end{gathered}$ | $\mathrm{T}_{0}$ U.S. Ports | To Foreign Ports | Total Shipments | $\begin{aligned} & \text { To } \\ & \text { Canadian } \\ & \text { Ports } \end{aligned}$ | To. Ports | To Oversess Ports | Total Shipments |
| Wheat.........bu. | 342, 838,180 | 657,020 | 5,804,573 | 349,299,773 | 294, 809,502 | - | 6, 124, 430 | 300,933,932 |
| Oata.......... "/ | 32,590,340 |  | 968,389 | 33,558,729 | 35,710, 134 | 276,739 | 10,070, 780 | 46,057,653 |
| Barley.......... ${ }_{\text {" }}$ | 31,558,158 | 7,594,650 | 3,557,717 | 42,710,525 | 35,745,4657 | 5,177,207 | 5,421,569 | 46, 344, 433 |
| Ryo............" | 1,185,785 | 2.012,301 | $1,724,242$ | 4,922,328 | 1,762,604 | 1,487.880 | 7 952, 908 | 4,203,392 |
| Flaxpeed. ...... " | 6,589,080 | - | 2,924,342 | 9,513,402 | $3,701,644$ | - | 7,339,746 | 11,041,390 |
| Rapeseed. ..... " | 282.722 |  | 59,359 $\mathbf{9 1}, 779$ | 59.359 374.501 | $\underline{100,733}$ | - | $1,235.584$ $\mathbf{3 5 0 , 1 1 5}$ | $1,337.317$ 380,115 |
| Tatals.....bu. | 415,044,245 | 10,263,971 | 15,130,401 | 440,435, 617 | 371,830,274 | 6,941,826 | 31,526,182 | 415,298, 372 |
| Sanflower seed.bu. Sample grain.. 8creenings. tor | $\begin{array}{r} 7,235,070 \\ 105,381 \end{array}$ | 二 | $\frac{87,117}{64,454}$ | 87,117 $7,235,070$ 169,835 | $\overline{71,175}$ | - | 94,873 <br> 62,888 | $\begin{array}{r}94,873 \\ \hline 134,063\end{array}$ |

Wheat Flour.-Production of wheat flour in the crop year 1964-65 amounted to $39,107,000 \mathrm{cwt}$., about 22 p.c. lower than in the previous crop year. Similarly, wheat milled for flour at $87,209,000$ bu. was 22 p.c. less than during 1963-64. Of the latter, about $76,286,000$ bu. were Western Canadian spring wheat (other than Durum) and the remainder consisted of Ontario winter wheat, Durum and 'other' Based on a daily operating potential of some $176,000 \mathrm{cwt}$., utilization of milling capacity averaged 76.7 p.c. in $1964-65$ compared with 94.3 p.c. in the preceding year. Exports of wheat flour during the 1964-65 crop year amounted to $13,714,000 \mathrm{cwt}$., 43 p.e. smaller than in 1963-64.

## 20.-Wheat Milled for Flour, and Production and Exports of Wheat Flour, Five-Year Averages 1940-50 and Crop Years Ended July 31, 1961-65

| Crop Year (Aug. 1-July 31) | Wheat Milled for Ftour | Wheat Flour Production | Wheat Flour Exports |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  | Amount | P.C. of Production |
|  | '000 ba. | cwt. | cwi. |  |
| Av. 1940-41-1944-45............ | 90.705 | 43,808, 245 | 23,699,546 | 54.0 |
| Av. 1945-46-1949-50. | 107,330 | 47,011,540 | 25,819,721 | 54.9 |
| Av. 1950-51-1954-55. | 100.446 | 48,847,894 | 21,812,041 | 49.7 |
| Av. 1955-56-1959-60.. | 90.148 | 39,752,589 | 16,349,155 | 41.1 |
| 1960-61. | 88,731 | 39,914,644 | 15.513.836 | 38.9 |
| 1961-62. | 88,241 | 30,539,651 | 13,892,676 | 35.1 |
| 1982-63. | 78,789 | 35,505,220 | 11,854,458 | 33.4 |
| 1963-84. | 111,671 | 50,103,569 | 23,873,987 | 47.6 |
| 1964-65. | 87,209 | 39,107,358 | 13,714,068 | 35.1 |

## Subsection 2.-Livestock Marketings*

The year 1965 was quite successful for livestock producers. Marketings of cattle and calves through commercial channels were the highest ever reached. With smaller meat supplies in the United States, a keen export market developed in the second quarter of the year and remained until mid-December; there were no imports of slaughter cattle from the United States during the year, although in 1964 30,878 United States butcher cattle were slaughtered in Canadian plants during a fairly short period. Doméstic disappearänce of beef from commercial supplies, at $1,357,000,000 \mathrm{lb}$., was up 6 p.c. from the previous year. Despite higher prices received during the better part of the year, the over-all averages for all cattle and calves were about the same as in 1964, the result of a heavier volume of cows marketed. Hog marketings were somewhat below 1964 but higher prices resulted in an all-time record commercial value of $\$ 343,200,000$. Sheep and lamb marketings continued their downward trend, following consistently lower production.

[^291]21.-Livestock Marketed at Stockyards and Packing Plants, by Grade, 1061-65


[^292]In addition to cattle sold through public stockyards and directly to packing plants, there were 36,122 cattle shipped from country points in one province to country points in another and 183,071 shipped direct on export, totalling $3,631,236$. All provinces showed substantial gains. On a percentage basis, British Columbia made the best showing with a 67.4-p.c. increase due largely to a sharp rise in export sales but, numerically, the three largest cattle producers kept the previous year's trend-Alberta leading with an increase of 195,359 , Saskatchewan with 165,523 and Ontario with 131,729 over 1964 . The trend in calf marketings followed closely that of the cattle market, both in volume and in demand. A keen export trade developed during the heavy fall deliveries and stocker calves formed a large part of the movement to the United States.

Reversing the pattern of the previous two years, the dressed weight of cattle slaughtered at inspected packing plants declined nearly 12 lb ., amounting to 530.7 lb . per carcass. This reduction was mainly attributed to heavy marketings of cows and heifers. Choice and good beef combined accounted for 49.3 p.c. of the total gradings compared with 54.3 p.c. in 1964.

Hogs graded at inspected and approved packing plants in 1965 plus those exported direct from country points totalled 7,077,126, 2.8 p.c. below the previous year. Most of the decrease took place in Ontario and Quebec. Hogs averaged 1 lb . less in weight in 1965, the average being 159.5 lb ., but the over-all quality of hog output continued its gradual rise. The percentage of grade A hogs reached a new high of 41.1 p.c., up 2.1 p.c. from 1964.

## 22.-Livestock Marketed at Public Stockyards, Packing Plants and Direct for Biport, by Province, 1965

| Livestock | Atlantic Provinces | Quebee | Ontario | Manitoba | Saskatchewan | Alberta | British Columbia | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No. | No. |
| Cattle. | 31,072 | 167,540 | 1, 777,374 | 363,210 | 704,749 | 1,183,237 | 105,424 | 3,631,236 |
| Totals to stockyards. | 3,828 | 81,047 | 515,580 | 247,059 | 380, 552 | 608,357 | 13,693 | 1,850,116 |
| Direct to psckers........ | 41,260 | 79,456 | \$13,971 | 110.530 | 238,578 | 530,892 | 47,240 | 1,581,927 |
| Direct for export.,...... Country points in other | 8,984 | 2,037 | 18,207 | 5,199 | 67,072 | 13,914 | 37,658 | 183,071 |
| provines ${ }^{\text {1.............. }}$ | - | - | 216 | 452 | 18,547 | 10,074 | 6,833 | 36,122 |
| Calres. | 19,411 | 308,706 | 307, 022 | 165,150 | 250,836 | 246,877 | 25.186 | 1,388,238 |
| Totals to stockyards | +5,511 | 81,946 | 115.044 | 133.879 | 160.759 | 133,050 | 3,748 | 637, 837 |
| Direct to packers....... | 12, 121 | 259, 270 | 161. 1979 | 27,756 | 18,690 | 52, 894 | 12,886 | 544.788 |
| Direct for export. <br> Country points in other provinces ${ }^{\text {l }}$. | 1,779 | 27,580 | 29,879 | 2,402 1,113 | 28,001 48,388 | 13,121 44,782 | 385 8,207 | 98,147 102,168 |
| Hods. | 211,441 | 1,482, 358 | 2,983,745 | 578,849 | 505.443 | 1,634,459 | 33,498 | 7,083,417 |
| Totals to stock yards |  | 12,669 | 433,087 | 189.348 | 49.210 | 118,629 |  | 802,943 |
| Direct to packers . . . . . . . . | 211,057 | 1,489,640 | 2,199,630 | 359,123 | 455, 942 | 1,515,761 | 33,030 | 6,274,183 |
| Direct for export......... | 384 | 49 | 5,052 | 378 | 291 | 1,69 | 68 | 6,291 |
| Sheep and Lambs. | 21,317 | 45,228 | 129,888 | 27.979 | 52,712 | 148,154 | 31,652 | 459,830 |
| Totals to stockyar | ${ }^{71}{ }_{5} 7$ | 1,463 | 73,222 | 10.677 | 17,315 | 28,866 | ${ }^{694}$ | 132,951 |
| Direct to packers. | 23,559 | 43,765 | 56.345 | 16,355 | 25,553 | 91,301 | 28,747 | 285, 625 |
| Direct for export........ | 44 | - | 321 | 140 | 1,542 | 18, 135 | 898 | 20,780 |
| Country points in other provinces. | - | - | - | 807 | 8,302 | 9,852 | 1,613 | 20,574 |
| Total luward Morement-s |  |  |  |  |  |  |  |  |
| Cattle... | 1,087 | 1,694 | 179,362 | 33,449 | 71,387 | 240,537 | 979 | 529,495 |
| Calves. | 90 | 657 | 211,003 | 2,365 | 15,752 | 84,325 | 474 | 314,866 |
| Sheep and lambs | - | 509 | 23.011 | 2,179 | 676 | 7,903 | 227 | 34,505 |

${ }^{1}$ Livestock billed through stockyards to country points outside province of origin. ${ }^{2}$ Movement to farms from stockysrds and plants, and sbipments on through-billinge from country points in one province to country points in another province.

## Section 3.-Storage and Warehousing

This Section carries data on licensed grain storage and the public warehousing industry only. Reference may be made to the 1963-64 Year Book, pp. 867-871, for information on other types of storage; later statistics may be obtained from the following sources: cold storage and storage of food-Economics Branch of the Canada Department of Agriculture; storage of petroleum and petroleum products-Energy Statistics Section of the Manufacturing and Primary Industries Division, DBS; customs warehouses-Port Administration Branch of the Department of National Revenue.

## Licensed Grain Storage

Total grain storage capacity in Canada, licensed under the provisions of the Canada Grain Act by the Board of Grain Commissioners for Canada, amounted to $673,097,000 \mathrm{bu}$. at Dec. 1, 1964, which was an increase of $8,776,000$ bu. over the capacity at Dec. 1, 1963; capacity was increased by $6,026,000 \mathrm{bu}$. in western country elevators and by $2,750,000 \mathrm{bu}$. in lower St. Lawrence ports. The movement of grain in and out of storage during the crop year 1964-65 is given at pp. 908-913; Table 23 gives the amounts in storage at three dates during the year. At July 31, 1965, 69.8 p.c. of the licensed storage capacity was occupied as compared with 61.8 p.c. at the same date in 1964.

## 23.-Licensed Grain Storage Capacity and Grain in Store, Crop Years 1963-64 and 1964-65

| Crop Year and Storage Position | Licensed Storage Capacity | Canadian GraininLicensed Storage |  |  | Proportion of Licensed Storage Capacity Occupied |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\underset{1963}{\text { Dec. } 1,}$ | Nov. 27, 1963 | $\begin{gathered} \text { Apr. } 1, \\ 1964 \end{gathered}$ | $\begin{gathered} \text { July } 31, \\ 1964 \end{gathered}$ | $\underset{1963}{\text { Nov. } 27,}$ | $\underset{1964}{\text { Apr. } 1,}$ | $\begin{gathered} \text { July } 31, \\ 1964 \end{gathered}$ |
| 1963-64 | '000 bu. | '000 bu. | '000 bu. | '000 bu. | p.c. | p.c. | p.c. |
| Western country. | 372,460 | 265,587 | 271,567 | 274,794 | 71.3 | 72,9 | 73.8 |
| Interior, private and mill | 17,908 | 9,854 | 10,742 | 9,617 | 55.0 | 60.0 | 53.7 |
| Interior, terminals. | 18,100 | 6,871 | 6,494 | 5,668 | 38.0 | 35.9 | 31.3 |
| Pacific Coast | 24,846 | 12,359 | 14,981 | 14,886 | 49.7 | 60.3 | 59.9 |
| Churchill | 5,000 | 4,759 | 4,759 | 4,759 | 95.2 | 95.2 | 95.2 |
| Fort William-Port Arthur | 106,421 | 56,859 | 93,192 | 72,936 | 53.4 | 87.6 | 68.5 |
| Georgian Bay and upper Lake ports.. | 36,566 | 26,609 | 6,721 | 5,545 | 72.8 | 18.4 | 15.2 |
| Lower Lake and upper St Lawrence ports | 20,100 | 11,057 | 5,951 | 7,048 | 55.0 | 29.6 | 35.1 |
| Lower St. Lawrence ports............. | 55,690 | 27,652 | 12,752 | 13,414 | 49.7 | 22.9 | 24.1 |
| Maritime ports (excl. Newfoundland). | 7,229 | 3,667 | 4,194 | 1,571 | 50.7 | 58.0 | 21.7 |
| Totals, 1963-64............... | 664,321 | 425,274 | 431,353 | 410,238 | 64.0 | 64.9 | 61.8 |
|  | $\underset{1964}{\text { Dec. } 1,}$ | $\begin{gathered} \text { Dec. 2, } \\ 1964 \end{gathered}$ | $\underset{1965}{\text { Mar. } 31,}$ | $\begin{gathered} \text { July } 31, \\ 1965 \end{gathered}$ | $\begin{gathered} \text { Dec. 2, } \\ 1964 \end{gathered}$ | $\underset{1965}{\text { Mar. } 31,}$ | $\begin{gathered} \text { July } 31 . \\ 1965 \end{gathered}$ |
|  | '000 bu. | '000 bu. | '000 bu. | '000 bu. | p.c. | p.c. | p.c. |
| 1964-65 |  |  |  |  |  |  |  |
| Western country ..................... | 378,486 | 229,906 | 248,738 | 302,221 | 60.7 | 65.7 | 79.8 |
| Interior, private and mill. | 17,908 | 10,846 | 10,523 | 10,177 | 60.6 | 58.8 | 56.8 |
| Interior, terminals. | 18,100 | 5,553 | 5,854 | 5,572 | 30.7 | 32.3 | 30.8 |
| Pacific Coast. | 24,846 | 15,023 | 12,775 | 8,906 | 60.5 | 51.4 | 35.8 |
| Churchill. | 5,000 | 4,700 | 4,700 | 4,393 | 94.0 | 94.0 | 87.9 |
| Fort William-Port Arthur | 106,421 | 63,634 | 88,932 | 70,130 | 59.8 | 83.6 | 65.9 |
| Georgian Bay and upper Lake ports.. | 36,566 | 32,817 | 12,632 | 25,016 | 89.7 | 34.5 | 68.4 |
| Lower Lake and upper St. Lawrence ports. | 20,100 | 12,543 | 8,152 | 10,863 | 62.4 | 40.6 | 54.0 |
| Lower St. Lawrence ports. | 58,440 | 40,049 | 22,318 | 28,202 | 68.5 | 38.2 | 48.3 |
| Maritime ports (excl. Newfoundland). | 7,229 | 6,757 | 2,724 | 4,184 | 93.5 | 37.7 | 57.9 |
| Totals, 1964-65. | 673,097 | 421,827 | 417,353 | 469,664 | 62.7 | 62.0 | 69.8 |

## The Public Warehousing Industry

The summary statistics of the warehousing industry presented in Table 24 cover the operations of the majority of firms offering general merchandise and refrigerated storage facilities to the public. Associations and organizations such as co-operatives operating warehouses or storages for their own members are not included nor are packing houses and other firms operating storage facilities in connection with their respective businesses. Small food lockers are not included except where they may be part of a general warehousing business.
24.-Summary Statistics of Warehousing of General Mercbandise and Refrigerated Goods, 1961-65

| Item | 1981 | 1982 | 1983 | 1964 | 1985 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Companies reporting...................... No. | 68,178,081 ${ }^{108}$ | 65, $\begin{array}{r}173,924\end{array}$ | 138 $83,930,051$ | 90,680,374 | $\begin{array}{r} 152 \\ 91,210,700 \end{array}$ |
| Harehousing Facilities- <br> General mercbandise1 ...................... cu. it. <br> Refrigerated goods. | 55, 527,385 $32,058,659$ | 53,723,491 $34,918,978$ | 77,108,607 | $83,047,067$ $44,620,942$ | $\begin{aligned} & 86,493,705 \\ & 44,058,489 \end{aligned}$ |
|  | $\begin{array}{r} 15,931,824 \\ 8,953,590 \\ 6,547,492 \end{array}$ | $15,906,838$ 7,287727 $6,773,633$ | $20,888,783$ $6.428,081$ $9,304,843$ | $\begin{gathered} 22,471,73.1 \\ 9,113,060 \\ 10,845,159 \end{gathered}$ | $\begin{aligned} & 22,102,879 \\ & 10.519 .532 \\ & 12,434,861 \end{aligned}$ |
| Total Revenue..................... \$ | 31,432,906 | 29,968,196 | 36,706,707 | 42,429,953 | 45.057,262 |
| Opersting expenses.......................... . \% | 29,314,749 | 27,784,302 | 33,679,586 | 39,857,425 | 42,470,941 |
| Net Operating Revenue............ \$ | 2,118,157 | 2,183,894 | 3,027,121 | 2,772,528 | 2,586,321 |
| Employees, average............................. No. Salaries and wagea. | $\begin{array}{r} 3,560 \\ 14,573,924 \end{array}$ | $\begin{array}{r} 8,137 \\ 14,141,772 \end{array}$ | $\begin{array}{r} 4,033 \\ 17,279,113 \end{array}$ | $\begin{array}{r} 4,403 \\ 20,034,223 \end{array}$ | $\begin{array}{r} 4,679 \\ 21,501,114 \end{array}$ |
| Motor VebiclesTrucks. Tractors. Trailers and semi-trailers..................... * | 783 158 221 | 634 148 206 | 602 330 158 | 652 165 253 | 671 186 296 |

1 Includes storage space for honsebold goods amounting to $1,608,700 \mathrm{cu}$. ft. in $1961 ; 997,900 \mathrm{cu}$. ft . in 1962; 900,000 cu. [t. in 1963; $1,077,090 \mathrm{cu}$. ft. in 1964; and $969,586 \mathrm{cu} . \mathrm{ft}$, in 1965 .

## Section 4,-Co-operative Organizations

In 1964, 2,643 local co-operatives with membership of $1,600,000$ reported a total volume of business of $\$ 1,85+, 600,000$ and assets of $\$ 818,000,000$. Compared with 1963 , the number of reporting co-operatives declined by 62 and the membership by 52,000 but total business increased by $\$ 173,000,000$ or 10 p.c. Receipts in 1964 were derived as follows: marketing of farm products, $\$ 1,268,700,000$; sales of supplies, $\$ 532,400,000$; service revenue (trucking, grinding, chopping, etc.), $\$ 10,000,000$; and miscellaneous income (rent, interest, dividends, etc.), $\$ 13,500,000$.

Marketing and purchasing associations accounted for the bulk of co-operative business in 1964 , having total revenues of $\$ 1,780,600,000$, and service and fishermen's associations for the remainder. Membership of marketing and purchasing associations decreased by 34,000 to $1,305,000$, and the number of associations declined from 1,583 to 1,546 . Sales of both farm products and supplies rose during 1964, the former by 13 p.e. to $\$ 1,268,700,000$ and the latter by 7 p.c. to $\$ 532,400,000$. Grain accounted for $\$ 118,000,000$ of the $\$ 142$,600,000 increase in sales of farm products. All provinces reported improved sales of farm products and supplies, with the greatest increases in Saskatchewan and Alberta as a result of higher wheat sales. Grain and livestock, concentrated in the Prairie Provinces, and dairy products, principally from Ontario and Quebec, were the most important farm products, comprising 52 p.c., 16 p.c. and 23 p.c., respectively of total farm marketings. Other farm sales consisted of fruits and vegetables, poultry and eggs, fish and miscellaneous items. The major supplies sold were food products ( 27 p.c.), feed and fertilizer ( 30 p.c.), and petroleum ( 16 p.c.); clothing, hardware, machinery, building materials, seeds and miscellancous goods made up the remainder. Total assets of marketing and purchasing co-operatives reached $\$ 697,500,000$ at the end of 1964 , and members' equity therein represented 48 p.c., compared with 45 p.c. in 1963 .

Wholesale co-operatives are federations of local co-operatives that act as central marketing agencies for farm products and as wholesalers of farm supplies, machinery and consumer goods. These associations reported sales of farm products and supplies of $\$ 382,300,000$ in 1964 , an increase of 7 p.c. over the previous year, and total assets of $\$ 122,800,000$ of which members' equity represented 36 p.c.

Service co-operatives, which provide such services as rural electrification, medical insurance, transportation, grazing, cold storage and seed cleaning, numbered 1,017 in 1964 with a membership of 281,000 , a decrease of 23 and 18,000 , respectively, from 1963 ; these decreases were mainly attributable to the nationalization of rural electrification associations in Quebec. Total volume of business amounted to $\$ 46,839,000$ compared with $\$ 39,060,000$ in 1963 and consisted of: service revenue, $\$ 28,468,000$; miscellaneous income, $\$ 1,056,000$ : and sales of products and supplies, $\$ 17,315,000$. Total assets were $\$ 105,145,000$, against $\$ 112,652,000$ in 1963. Fishermen's co-operatives reported a membership of 10,000 , fish sales of $\$ 21,744,000$ and supply sales of $\$ 5,065,000$ in 1964; comparable figures for 1963 were $10,000, \$ 19,525,000$ and $\$ 4,741,000$, respectively.

Arctic co-operatives operating in the Canadian North have continued to progress steadily; at the end of 1964 they numbered 20 , with sales totalling approximately $\$ 1,000,000$, share capital of over $\$ 130,000$, and reserves and undistributed savings of well over $\$ 200,000$. Two new co-operatives were incorporated in 1965.
25.-Summary Statistics of Co-operative Marketing and Purchasing Associations, 1059-64 and by Province 1563 and 1964

| Year and Province | Associations | Sharebolders or Members | Sales of Products | Sales of Merchandise | Total Business ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | \$000 | $8{ }^{\prime} 000$ | $\$^{7} 000$ |
| 1959 (erop year ended July 31) . | 1,982 | 1,290,462 | 963,330 | 332,943 | 1.315, 167 |
|  | 1,934 | 1,319,187 | -973,958 | 368,090 | 1,362,596 |
|  | 1,914 | 1,324,270 | 1,019,819 | 391,761 | 1,430.197 |
| 1962 " "* | 1,877 | 1,287,562 | 928,502 | 433,302 | 1,372,605 |
| 1983 (calendar year). | 1,583 | 1,339,000 | 1,100,200 | 489,000 | 1,617,900 |
| $1964{ }^{4} 4$ | 1,546 | 1,305,000 | 1,234,000 | 522,800 | 1,780,600 |
| Province | 42 | $\begin{aligned} & 9,000 \\ & 8,000 \end{aligned}$ | $\begin{aligned} & 100 \end{aligned}$ | $\begin{aligned} & 5,800 \\ & 6,000 \end{aligned}$ | $\begin{aligned} & 5,900 \\ & 6,300 \end{aligned}$ |
| Newfoundland.............................. 1968 |  |  |  |  |  |
| Prince Edward Island....................... 1963 | 21 15 | $\begin{array}{r} 10,000 \\ 9,000 \end{array}$ | $\begin{aligned} & 4,900 \\ & 5,700 \end{aligned}$ | $\begin{aligned} & 5,000 \\ & 5,300 \end{aligned}$ | $\begin{aligned} & 10,200 \\ & 11,100 \end{aligned}$ |
| Nova Scotia ................................ 1963 | 88 | $\begin{aligned} & 27,000 \\ & 27,000 \end{aligned}$ | $\begin{array}{r} 21,700 \\ 21,400 \end{array}$ | $\begin{aligned} & 20,000 \\ & 21,000 \end{aligned}$ | $\begin{aligned} & 42,400 \\ & 42,900 \end{aligned}$ |
|  |  |  |  |  |  |
| New Brunswick, ........................... $1968{ }_{1964}$ | 5634 | $\begin{aligned} & 16,000 \\ & 16,000 \end{aligned}$ | $\begin{aligned} & 11,200 \\ & 10,800 \end{aligned}$ | $\begin{aligned} & \pm 2.800 \\ & 13,200 \end{aligned}$ | $\begin{aligned} & 24,400 \\ & 24,300 \end{aligned}$ |
|  |  |  |  |  |  |
| Quebec.................................... . . 1968 | 466464 | $\begin{aligned} & 88,000 \\ & 86,000 \end{aligned}$ | $\begin{aligned} & 187.100 \\ & 150,000 \end{aligned}$ | $\begin{aligned} & 110,500 \\ & 117,000 \end{aligned}$ | $\begin{aligned} & 255,200 \\ & 272,009 \end{aligned}$ |
|  |  |  |  |  |  |
| Ontario. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 1963 | $\begin{aligned} & 236 \\ & 234 \end{aligned}$ | $\begin{aligned} & 144,000 \\ & 110,000 \end{aligned}$ | $\begin{array}{r} 98,700 \\ 111,600 \end{array}$ | $\begin{aligned} & 86,800 \\ & 89,200 \end{aligned}$ | $\begin{aligned} & 191,300 \\ & 205,600 \end{aligned}$ |
| 1964 |  |  |  |  |  |
| Manitoba . .........i....................... 1968 | $\begin{aligned} & 111 \\ & 112 \end{aligned}$ | $\begin{aligned} & 182,000 \\ & 185,000 \end{aligned}$ | $\begin{aligned} & 121,200 \\ & 122,500 \end{aligned}$ | $\begin{aligned} & 35,500 \\ & 38,500 \end{aligned}$ | $\begin{aligned} & 159,300 \\ & 168,700 \end{aligned}$ |
|  |  |  |  |  |  |
| Saskatchewsan.............................. 1968 | $\begin{aligned} & 333 \\ & 313 \end{aligned}$ | $\begin{aligned} & 449,000 \\ & 442,000 \end{aligned}$ | $\begin{aligned} & 355,200 \\ & 412,500 \end{aligned}$ | $\begin{array}{r} 99,100 \\ 107,300 \end{array}$ | $\begin{aligned} & 482,500 \\ & 527 ; 500 \end{aligned}$ |
|  |  |  |  |  |  |
| Alberta. . . . . . . . . . . . . . . . . . . . . . . . . . 19.1963 | 141 | $\begin{aligned} & 235,000 \\ & 246,000 \end{aligned}$ | $\begin{aligned} & 180,000 \\ & 214,000 \end{aligned}$ | $\begin{aligned} & 53,500 \\ & 58,300 \end{aligned}$ | $\begin{aligned} & 235,000 \\ & 273.800 \end{aligned}$ |
|  |  |  |  |  |  |
| British Columbis. . . . . . . . . . . . . . . . . . . . 19.1988 | 89 | $\begin{aligned} & 53,000 \\ & 51,000 \end{aligned}$ | $\begin{aligned} & 66,500 \\ & 70,300 \end{aligned}$ | $\begin{aligned} & 34,000 \\ & 37,500 \end{aligned}$ | $\begin{aligned} & 102,000 \\ & 108,900 \end{aligned}$ |
|  |  |  |  |  |  |
| Interprovincial. . . . . . . . . . . . . . . . . . . . . . . . 19.1963 | ${ }_{6}^{6}$ | $\begin{aligned} & 126,000 \\ & 125,000 \end{aligned}$ | $\begin{aligned} & 103,800 \\ & 114,900 \end{aligned}$ | $\begin{aligned} & 26,000 \\ & 29,500 \end{aligned}$ | $\begin{aligned} & 129,700 \\ & 144,500 \end{aligned}$ |
|  |  |  |  |  |  |

${ }^{1}$ Includes other revenue.
26.-Products Handled by Marketing and Purchasing Co-0peratives, 1983 and 1964

${ }^{1}$ Duplication exists as some associations market more than one product.

## Section 5.-Interprovincial Freight Movements*

Certain interprovincial freight traffic statistice are available on the loadings and unloadings of goods carried by rail, water, motor transport and pipeline. Details of railway freight movement are confined to tons loaded and unloaded by province and contain a certain amount of import and export of goods shipped by water. The figures given in Table 27, bowever, do not give a precise measure of total interprovincial freight movement by rail; they indicate only the net interprovincial movement of railway freight, which is but one aspect of that trade. For water-borne traffic, Table 28 shows tonnages of all cargoes unloaded at Canadian ports in both interprovincial and intraprovincial trade, by province of origin. Interprovincial and international traffic carried by Canadian registered trucks is shown in Table 29. Pipeline statistics are given in the Transportation Chapter, pp. 859-860.

[^293]
## 27.-Railway Revenue Freight Movement, by Province, 1964 and 1965

(Class I and II railways operating in Canads)

| Province | Loaded |  | Received from U.S.A. Rsil Connections |  | Totals Carried |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1964 | 1965 | 1964 | 1965 | 1964 | 1965 |
|  | tons | tons | tons | tons | torn | tons |
| Newtoubdland .......... | 1,625,833 | 4,681,182 | - | - | 1,625,333 | 4,891,132 |
| Prince Edward Ialand. . | 377,997 | 376,289 | - | - | 377,997 | 376,289 |
| Nova Scotis............ | 11,498,836 | 12,075,096 | - | - | 11,498, 836 | 12,075,096 |
| New Brunswick. . . . . . . | 4,607,025 | 4,642,651 | 191,816 | 243,816 | 4,798, 844 | 4,886,487 |
| Quebeo. | 51,787,588 | 52,334,608 | 2,574,598 | 3,128,549 | 54,362,186 | 55,461, 155 |
| Ontaria................. | 48,409,518 | 49,044,409 | 19,422,652 | 18,534,695 | 65,832,170 | 68,579, 104 |
| Manitoba. | 7,702,602 | 8, 185,392 | 895,604 | 461,195 | 8,098,206 | 8,646,587 |
| Saskatchewan.......... | 19,240,440 | 17,421,160 | 179,375 | 191,542 | 19,419,815 | 17,612,702 |
| Alberta................ | 16,303,561 | 15,585, 834 | 216,241 | 810,076 | 18,519,802 | 15,885,910 |
| British Colambis....... <br> Totals $\qquad$ | 14,516,098 | 15,610,338 | 1,287,278 | 1,462,416 | 15,803,376 | 17,072.754 |
|  | 174,059,001 | 179,866,907 | 24,267,564 | 25,330,289 | 198,336,565 | 205,197,196 |
|  | Unlorded |  | Delivered to U.S.A. Rail Connections |  | Totals Terminated |  |
|  | 1964 | 1985 | 1964 | 1965 | 1964 | 1965 |
|  | tons | tons | tons | tons | tons | tons |
| Newfoandland ${ }^{\text {a }}$ | 1,920,072 | 2,139,896 | - | - | 1,920,072 | 2,139,896 |
| Prince Edward Island.. | 602,872 | 658,369 | - | - | 602,872 | 658,369 |
| Nova Scotia.. | 10,405,388 | 11,309,795 | - | - | 10,405,389 | 11,309,795 |
| New Brunswick. ........ | 5,087,214 | 5,519,414 | 446,756 | 322,123 | 5,533,970 | 5,841,537 |
| Qaebeo. | 51,829,735 | 55,313,652 | 5,033,373 | 5,460,442 | 56,883,308 | 60,774,094 |
| Ontario.. | 56,491,138 | 57,527.782 | 23,293,181 | 23,240,318 | 79,784,269 | 80.768 .100 |
| Manitoba. | 6,871,866 | 7,050,336 | 974,315 | 1,635,677 | 7,846,181 | 8,686,018 |
| Saskatchewan. | 3,794,952 | 4,132,346 | 1,837,355 | 1,828,024 | 5,632,307 | 5,960,370 |
| Alberta. | 7,016,752 | 7,190,197 | 90,493 | 109,031 | 7, 107,245 | 7,309,128 |
| British Columbis.. | 18,709,794 | 19,227,293 | 2,305,254 | 2,524.060 | 21,015.048 | 21,751,353 |
| Totals. | 162,729,784 | 170,078,080 | 33,880,477 | 35,120,575 | 196.710,461 | 205, 198, 655 |

[^294]28.-Tonnage of Cargo Loaded and Unloaded at Canadian Ports in Interprovincial Trade, by Province, 1964 and 1965

| Year and Province of Unloading | Province of Loading |  |  |  |  |  |  |  | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | $\begin{gathered} \text { B.C. } \\ \text { s.W. } \\ \text { N.T. } \end{gathered}$ |  |
|  | tons | tons | tong | tors | tons | tons | tons | tons | tons |
| 1864 |  |  |  |  |  |  |  |  |  |
| Nfid. | 827, 652 | 12,152 | 985,287 | 102,972 | 179,626 | 15.234 | - | 5,585 | 2,128,508 |
| P.E.I | -859 | $\rightarrow$ | 212,290 | 123,515 | 2,923 | 7,658 | - |  | , 347,245 |
| N.S. | 755,272 | 33,055 | 269,060 | 370,700 | 382,709 | 217,677 | - | 1,959 | 2,031,322 |
| N.B. | 5.075 | 29,697 | 620,013 | 235,888 | 270,549 | 20,900 | - | 3,531 | 1, 185,633 |
| Que. | 280,997 | 30,827 | 1,231,270 | 416,593 | 5,583, 160 | 9,661,325 | 8,391 | 18,234 | 17,230,797 |
| Ont.. | 13,469 | - | 415,659 | - | 1,978,738 | $11,458,181$ | 4,266 | - | 13,870,313 |
| Man.... |  | - | - | - | 1,740 | 11 | 424 | 82 | $=2,257$ |
| N.W.T. | 12,592 | - | - | - | 32.744 | - | 3,118 | 15,020,254 | 15,068,708 |
| Totals, 1884. | 1,895,916 | 103,781 | 3,734,468 | 1,249,048 | 8,43\%, 188 | 21,380,286 | 16,19* | 15, 449, 845 | 5t, 844,783 |
| 1345 |  |  |  |  |  |  |  |  | + |
| Nfid. | 618,614 | 12,472 | 1,068,307 | 96,533 | 199,134 | 28,732 | $\cdots$ | 2,882 | 2,023,674 |
| P.E.T. | 1.805 | , 24 | 145,234 | 142,361 | 9,946 | \%,015 | - |  | 1308,385 |
| N.S... | 213,645 | 21,215 | 226,129 | 372,118 | 429,651 | 225.418 | - | - | 1,518,176 |
| N.B. | 499 | 36,420 | 736,554 | 220,685 | 67,384 | 11,776 | - | - | 1,073,318 |
| Que. | 322,517 | 31,004 | 1,062,380 | 383,517 | 5,564,922 | 8.874.91R | 6,540 | 353 | 16,246,751 |
| Ont. | 20,774 | , | 589,497 |  | 3,019,198 | 10,473,898 | 1 | 2 | 14, 103, 370 |
| Man........ | , | - | - | - |  |  | - | 67 | 95 |
| $\begin{aligned} & \text { B.C. and } \\ & \text { N.W.T. } \end{aligned}$ | 22.687 | - | 3,617 | - | 34,145 | - | 831 | 17,769,203 | 17,820,483 |
| Totals, 1985. | 1,230,541 | 101,735 | 3,831,718 | 1,215,214 | 9,384,301 | 19,620,774 | 7,372 | 17,762,517 | 58,034,252 |

29.-Interprovincial and International Traffic by Canadian Registered Trucks,

| $\qquad$ | Atlantic Provivces | Que. | Ont. | Man. | Sask. | Alta. | B.C. | $\begin{gathered} \text { Y.T. } \\ \text { M.W. } \\ \text { N.W.T. } \end{gathered}$ | United Btates | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | '000 | '000 tons | $\begin{aligned} & \because 000 \\ & \text { tons } \end{aligned}$ | $\begin{aligned} & \text { '000 } \\ & \text { tons } \end{aligned}$ | '000 | +000 | '000 | '000 tons | '000 | '000 |
| 1963 <br> From- <br> Atlantic Provinces..... Quebec. <br> Ontario. <br> Manitobs. <br> Saskatchewan. <br> Alberta. <br> British Columbia. <br> Yukon and Northwest <br> Territories.. <br> United States. <br> Totals, 1963. |  |  |  |  |  |  |  |  |  |  |
|  | 86 | 49 |  | 40 | - | $-46$ | 7 | 二 | 165 | $\begin{array}{r}219 \\ \hline 717\end{array}$ |
|  | 88 | 1,186 | 1,121 | 120 | 20 | 46 95 | 11 | - | 417 513 | 1,717 1,969 |
|  | 8 | 1,186 38 | -198 | 126 | 204 | -129 | 17 | - | ${ }_{13}$ | +682 |
|  | - | 4 | 4 | 291 | - | 79 | 3 | - | 27 | 408 |
|  | - | 52 | 64 | 87 | 193 | - | 453 | 48 | 87 | 994 |
|  | 1 | 14 | 45 | 10 | 31 | 377 | - | 89 | 180 | 747 |
|  |  |  | - |  | - | 6 | 28 | - | - | 34 |
|  | 31 | 358 | 668 | 20 | 12 | 17 | 88 | $\cdots$ |  | 1,094 |
|  | 126 | 1, 721 | 2,005 | 574 | $46 *$ | 742 | 597 | 137 | 1,402 | 7,764 |
| 1964 <br> From- <br> Atlantic Provinces. Quebec Ontario Manitoba. Saskatchewan. Alberta British Columbia Yukon and Nortbwest Territories. United States. |  |  |  |  |  |  |  |  |  |  |
|  | - | 60 | 15 | , | - |  | 1 | - | 283 | 359 |
|  | 64 | - | 1,381 | 47 | ${ }^{6}$ | 70 | 14 | - | 406 | 1,988 |
|  | 28 | 1,490 | - | 133 | 10 | 127 | 41 |  | 1,042 | 2,871 |
|  | - | 54 | 182 | - | 246 | 82 | 11 |  | 14 | 539 |
|  | + | 3 | 8 | 226 | 18 | 83 | ${ }^{7}$ |  | 18 | 1345 |
|  | 二 | 81 | 108 | 74 | 183 | 377 | 453 | 1111 | -40 | 1.087 |
|  | - | 22 | 54 | 15 | 15 | 377 | - | 111 | 218 | 812 |
|  |  | - | - | - | - | 13 | 24 | - | - | 37 |
|  | 21 | 236 | 486 | 3 | 24 | 19 | 109 | - |  | 898 |
| Totais, 1964. . . . . . . | 113 | 1,946 | 2.234 | 498 | 484 | 771 | 659 | 200 | 2,031 | 8,986 |

## PART II.-GOVERNMENT AIDS TO AND CONTROL OF DOMESTIC TRADE

Section 1.-Controls Affecting the Marketing of Farm Products

## Subsection 1.-Control of the Grain Trade

The agencies exercising control of the grain trade in Canada include the Board of Grain Commissioners for Canada which, since 1912, has administered the provisions of the Canada Grain Act, and the Canadian Wheat Board which operates under the Canadian Wheat Board Act, 1935.

The Board of Grain Commissioners for Canada.*-The Board of Grain Commissioners was established in 1912 under the authority of the Canada Grain Act, 1912 (RSC 1952, ce. 25 and 308 and amendments). It is a quasi-judicial and administrative body of three-a chief commissioner and two commissioners-reporting to the Minister of Agriculture.

The Canada Grain Act has been called the Magna Charta of the Canadian grain trade or, more particularly, of the Canadian farmer, and the Board's chief duties are to ensure that the rights conferred on the different parties by the provisions of the Act are properly protected. Transportation of grain is restricted except from or to licensed elevators, and restriction is placed on the use of established grade names. The Act does not provide for any control or supervision of grain exchanges and the Board of Grain Commissioners has no power or duties in the matter of grain prices.

The Board manages and operates, under semi-public terminal licences, the Canadian Government elevators situated at Moose Jaw and Saskatoon, Sask., Lethbridge, Edmonton and Calgary, Alta., and Prince Rupert, B.C. The Executive Offices of the Board and other principal offices are situated at Winnipeg, Man., but branch offices are maintained at numerous points from Montreal in the east to Victoria in the west. Total personnel is approximately 1,100 , including elevator staff.

On a fee basis, the Board provides official inspection, grading and weighing of grain, and registration of warehouse receipts. All operators of elevators in Western Canada and of elevators in Eastern Canada that handle western-grown grain for export, as well as all parties operating as grain commission merchants, track buyers of grain, or as grain dealers, are required to be licensed by the Board annually and to file security by bond or otherwise as a guarantee for the performance of all obligations imposed upon them by the Canada Grain Act or by the regulations of the Board.

To protect the rights of the different parties, the Board has jurisdiction to inquire into and is empowered to give direction regarding any matter relating to the grading or weighing of grain; deductions made from grain for dockage; shortages on delivery of grain into or out of elevators; unfair or discriminatory operation of any elevator: refusal or neglect of any person to comply with any provision of the Canada Grain Act; and any other matter arising out of the performance of the duties of the Board.

In the Prairie Provinces the Board maintains four assistant commissioners-one in Alberta, two in Saskatchewan and one in Manitoba. These assistant commissioners investigate complaints of producers and inspect periodically the country elevators in their respective provinces; all elevators with their equipment and stocks of grain are subject at any time to inspection by officials of the Board.

The Board sets up, annually, Committees on Grain Standards and also appoints Grain Appeal Tribunals to give final decisions in cases where appeals are made against the grading of grain by the Board's inspection officials. To assist in maintaining the

[^295]uniform quality of the top grades of Red Spring wheat handled through terminal elevators, the Canada Grain Act provides that wheat of these grades shall be stored with grain of like grade only.

The Grain Research Laboratory, located at Winnipeg, is the main centre of research on the chemistry of Canadian grains. It is well staffed and equipped to provide the service required to help maintain and expand domestic and foreign markets for all types of grain. The Laboratory collects and tests samples of various crops to obtain information on the current quality of all grains shipped during the crop year. Fundamental research is also undertaken: the program is directed toward better understanding of what constitutes quality in cereal grains and toward improvement in the methods of assessing quality.

In addition to its duties under the Canada Grain Act, certain other duties are performed by the Board. Under the provisions of the Inland Water Freight Rates Act (RSC 1952, c. 153), the Board maintains records of rates for the carriage of grain from Fort William or Port Arthur, Ont., by lake or river navigation and is empowered to prescribe maximum rates for such carriage. Under the provisions of the Prairie Farm Assistance Act (RSC 1952, c. 213 as amended), the Board collects from licensees under the Canada Grain Act I p.c. of the purchase price of wheat, oats, barley, rye, flax and rapeseed purchased by such licensees.

The Canadian Wheat Board.*-The Canadian Wheat Board was established under the Canadian Wheat Board Act of 1935 for the purpose of "the marketing in an orderly manner, in interprovincial and export trade, of grain grown in Canada" and now operates under RSC 1952, c. 44 as amended. The Board accomplishes its objective through regulation and agreement. It owns no grain handling facilities but, by entering into agreements with the owners of these facilities, it attempts to bring about an orderly flow of grain through each of the steps involved in merchandising the grain from the producer to the domestic or overseas buyer.

In the selling of wheat, the Board utilizes the services of shippers and exporters. In its sales operations, the Board endeavours to meet the wishes of overseas buyers and, on occasion, enters into direct contracts. When an exporter completes an export sale, in bis capacity as an agent of the Board, he is responsible for the transaction; he completes the transaction with the buyer and settles with the Board for the purchase of the wheat from the Board.

When the commercial storage facilities are ingdequate to handle all the grain produced, it is necessary for the Board to regulate the flow of grain from the producer to these forward positions. The first step is accomplished by the use of producer's delivery permits issued annually by The Canadian Wheat Board. Every delivery of grain made to country elevators by a producer is entered in his permit book. By regulating the amount of grain delivered by the producer to the country elevator by the use of a quota system and, by apportioning shipping orders to country elevators according to the needs created by sales commitments, the Wheat Board regulates the amount of grain coming into the marketing channel.

The next step is the handling of the grain by the country elevator. The maximum charges for the handling and storing of the grain are set by the Board of Grain Commissioners, but the actual charges are subject to negotiation between the elevator companies and the Wheat Board.

The third step in the marketing process-transporting the grain from the country elevators to large terminal elevators in Eastern Canada, Churchill or on the West Coastis carried out by the railways. The Wheat Board determines the kinds and grades of grain that are required at the different terminal destinations to meet its sales commitments and informs the elevator companies and the railways of these needs. The maximum tariffs are set by an agreement betreen the railways and the Government of Canada.

[^296]The fourth major atep-storing and handling of the grain at terminal elevatorsis done in privately or co-operatively owned elevators. Maximum charges are established for this service by the Board of Grain Commissioners.

In the case of oats and barley, the Board's operations are less extensive than those relating to wheat. These two grains are sold in store positions at the terminal elevators at Fort William-Port Arthur and Vancouver. Oats and barley are marketed either on a straight cash basis at prices quoted daily by the Board or on the basis of exchange of futures concluded through the facilities of the Winnipeg Grain Exchange. The Board controls the movement of coarse grains to the Lakehead. The private trade is responsible for the movement of oats and barley from Jakehead or Vancouver positions.

The producer receives payment for his wheat, oats and barley in two or three stages. An initial payment price is established early in the crop year by Order in Council. The initial payment price less the cost of handling grain at the local elevator and the transportation costs to the Lakebead or Vancouver is the initial price received by the producer. This price is a guaranteed floor price in that if the Wheat Board, in selling the grain, does not realize this price and the necessary marketing costs, the deficit is borne by the Federal Treasury. However, with very few exceptions, the Wheat Board has operated without financial aid from the Federal Treasury-

After the end of the crop year, but prior to the final payment being made, if the Wheat Board can confidently foresee a surplus accumulating and if authorized by Order in Council, an interim payment is made to producers. This interim payment is the same amount per bushel to all producers of the same grade of grain. When the Board has sold all the grain or otherwise disposed of it in accordance with the Canadian Wheat Board Act, the Board, if authorized by Order in Council, makes a final payment to producers.

Under the Prairie Grain Advance Payments Act, administered by the Board, producers may receive, through their elevator agents, cash advances on farm-stored grain in accordance with a prescribed formula. The purpose of this legislation is to make cash available to producers pending delivery of their grain under delivery quotas established by the Board. Cash advances are interest-free as far as producers are concerned.

Weatern Canadian producers receive the price for their grain that the Wheat Board receives, less its operating costs including carrying charge, and the general level of prices received by the Board is determined by competitive conditions in world markets. The only subsidy received by the farmer in the Canadian wheat marketing system is the partpayment of storage costs for wheat made by the Government of Canada. Under provisions of the Temporary Wheat Reserves Act, the Minister of Finance, out of the Consolidated Revenue Fund, pays to the Wheat Board the storage costs on wheat in storage at the end of the crop year in excess of $178,000,000$ bu.

## Subsection 2.-Controls Over Farm Products Other Than Grain*

The Government of Canada and provincial governments have, through legislation and in other ways, given marketing aids such as those related to research, education, information, inspection, grading and many other service measures of this type, designed to assist in making adjustments in marketing within agriculture and between agriculture and the remainder of the economy. Closely related is regulatory action designed to protect the consumer.

Producers have been concerned about another type of market control, namely that which will give either their organizations or a government agency influence over the price received. In a highly specialized commercial agriculture such as Canada now has, the producer is dependent on the price of his product for his livelihood. Cazadian farmers

[^297]have long attempted to obtain some measure of market control through voluntary organizations, mainly marketing co-operatives. All provinces have made provision for the incorporation of such co-operatives and most, if not all, have provided other assistance to them. In the federal field, the Agricultural Products Co-operative Marketing Act encourages marketing under a co-operative plan.

Other legislation provides for legal control over the marketing of agricultural products, either by a producers' board or a government agency. Legislation of this type includes that pertaining to milk control boards, to producer marketing boards and to industry marketing commissions. Measures pertaining to grain marketing have been reviewed in Subsection 1, pp. 923-925, and the Agricultural Stabilization Act, which provides price support for certain key products is discussed in the Agriculture Chapter, pp. 457-458.

Product Controls.-The federal and provincial departments of agriculture cooperate in establishing and enforcing grades of quality standards for various foods. Some control over size and type of containers used for distribution of agricultural products is exercised by the Canada Department of Agriculture and the Department of Trade and Commerce enforces regulations pertaining to weights and measures (see p.934).

Controls related to health and sanitation in food handling are developed and enforced at all three levels of government-municipal, provincial and federal. Examples of provincial and municipal action include laws pertaining to the pasteurization of milk, inspection of slaughterhouses and sanitary standards in restaurants. At the federal level, inspection by the Health of Animals Branch of the Department of Agriculture of all meat carcasses that enter into interprovincial trade is required. The Food and Drug Directorate of the Department of National Health and Welfare has wide control over the composition of foods sold and over misleading advertising of foods and drugs.

Marketing Controls.-The Agricultural Products Co-operative Marketing Act.-In the late 1930s, the Federal Government decided to assist orderly marketing by encouraging the establishment of pools which would give to the producer the maximum sales return for his product, less a maximum margin for handling expenses agreed upon in advance. Thus, the Agricultural Products Co-operative Marketing Act and the Wheat Co-operative Marketing Act were passed in 1939. The latter was used in one year only but the Agriculturad Products Co-operative Marketing Act, which covers the marketing of all agricultural products except wheat, has continuously served agricultural producers since 1939.

The purpose of this Act is to aid farmers in pooling the returas from sale of their products by guaranteeing initial payments and thus assisting in the orderly marketing of the product. The Government may undertake to guarantee a certain minimum initial payment to the producer at the time of delivery of the product, including a margin for handling; sales returns are made to the producer on a co-operative plan. The guaranteed initial payment may be up to a maximum of 80 p.c. of the average price paid to producers for the previous three years, the exact percentage to be recommended by the Minister of Agriculture who enters into an agreement with the selling agency for the product.

Agreements have been made under this Act pertaining to a wide variety of agricultural products. In 1964 the only agreement made was with respect to apples for processing.

Milk Control Legislation.-Most of the provinces enacted milk control legislation before 1940. Many of them finance these milk-control agencies out of public funds, others finance through the collection of licence fees and assessments from those engaged in the fluid milk industry, and some combine the two methods. Most milk-control agencies have authority to carry out some system of licensing which provides for the revocation of such licences if those engaged in the fluid milk business do not conform with the orders of the milk control board.

In all provinces with such boards, the milk control board sets the minimum price which distributors in specified markets may pay producers for Class I milk, that is, milk actually sold for fluid consumption. In Ontario and British Columbia, formulas are taken
as a guide in the setting of minimum prices. Most provinces also set either minimum or fixed wholesale and retail prices for fluid milk. The wholesale and retail prices are fixed in Prince Edward Island, Nova Scotia and Saskatchewan: minimum prices are established in New Brunswick, Quebec and Alberta. However, maximum but not minimum prices are set in Manitoba and no control is exercised over milk prices at the wholesale and retail levels in Ontario and British Columbia; in these three provinces some degree of price competition between store and home delivery sales has developed.

The powers given to or requirements made by milk control boards include: (1) authority to inquire in to all matters pertaining to the fluid milk industry, to define market areas, to arbitrate disputes, to examine the books and records of those engaged in the industry, to issue and revoke licences, and to establish a price for milk, and (2) authority to require a bond from distributors, periodic reports from distributors, payments to be made to producers by a certain date each month, distributors to give statements to suppliers, distributors to give notice before ceasing to accept milk from any producer, producers to give notice before ceasing to deliver milk to any distributor, and the prohibition of distributors requiring capital investment from producers.

At the national level, a Canadian Dairy Commission has been established recently which will take over its full operating function on Apr. 1, 1967 This is a new departure in the area of agricultural marketing; it is the first time with any farm product that a national board and provincial boards bave authority to deal with the same industry in their respective areas of jurisdiction. The Canadian Dairy Commission will complement provincial function in that its responsibility will be regulating the marketing and pricing of milk, and perhaps milk products, that move in interprovincial or international trade. Briefly, the function of the Commission is to provide efficient producers of milk and cream with the opportunity of obtaining a fair return for their labour and investment and to provide consumers with a continuous and adequate supply of dairy products of high quality. The Commission, beginning Apr. 1, 1967, will be the agency to administer the funds provided by the-Federal Government for stabilization purposes.

Producer Marketing Boards.-During the 1930s strong support developed for legislation whereby agricultural producers could exercise legal authority under certain conditions to control the marketing of their produce. The Natural Products Marketing Act of 1934 attempted to provide this power at the federal level but proved ultra vires. The Natural Products Marketing (British Columbia) Act 1936 was intra vires of provincial government powers and provided the model from which marketing board legislation has evolved in all ten provinces.

While marketing board legislation has been revised from time to time on the basis of experience and there are variations in detail from province to province, the same basic powers are given to producers in all provinces. These powers include authority for a duly constituted producer board to control the marketing of 100 p.c. of a specified commodity produced in a designated area. A producers' board, in at least some provinces, may set production quotas for each farmer. One producers' board may control the marketing of several related commodities and the designated area may be either the whole or part of a province. A producer vote is usually required to establish a producer marketing board whose powers are delegated either by a provincial marketing board, which has certain supervisory authority, or by the Lieutenant-Governor in Council.

The powers of a producers' board provided by provincial legislation are necessarily limited to intraprovincial trade. Under the Agricultural Products Marketing Act, the Federal Government may delegate to a marketing board with respect to interprovincial and export trade similar powers to those obtained with respect to intraprovincial trade under provincial authority. This Act also gives the Governor in Council the right to authorize a provincial marketing board to impose and collect levies from persons engaged in the production and marketing of commodities controlled by it for the purposes of the board, the creation of reserves and equalization of returns.

In 1964 there were 88 such marketing boards organized in Canada, 54 of which were in the Province of Quebec and 17 in Ontario; each of the other provinces with the exception of Newfoundland had one or more boards. It is estimated that about one seventh of the 1964 farm cash income was received from sales made under the control of provincial marketing board plans, including the following commodities: hogs, certain dairy products, poultry, wool, tobacco, wheat, soybeans, sugar beets, potatoes, other vegetables, fruits, seed corn, white beans, honey, maple products and pulpwood. As at Oct. 31, 1965, 38 of these provincial boards had received an extension of powers for purposes of interprovincial and export trade from the Federal Government. Seven boards had received authority with regard to seven commodities to collect levies in excess of administrative expenses.

## Section 2.-Combinations in Restraint of Trade*

The purpose of Canadian anti-combines legislation is to assist in maintaining free and open competition as a prime stimulus to the achievement of maximum production, distribution and employment in a system of free enterprise. To this end, the legislation seeks to eliminate certain practices in restraint of trade that serve to prevent the nation's economic resources from being most effectively used for the advantage of all citizens.

By amendments that came into force on Aug. 10, 1960 (SC 1960, c. 45), all the provisions of the anti-combines legislation which previously had been divided between the Combines Investigation Act (RSC 1952, c. 314) and the Criminal Code were amended and consolidated in the Act. The substantive provisions now are contained in Sects. 2, $32,33,33 \mathrm{~A}, 33 \mathrm{~B}, 33 \mathrm{C}$ and 34 of the Combines Investigation Act. The Act was enacted in 1923 and was amended extensively in 1935, 1937, 1946, 1949, 1951 and 1952 as well as in 1960.

Sect. 32, generally speaking, forbids in Subsect. (1) combinations that prevent or Iessen "unduly" competition in the production, manufacture, purchase, barter, sale, storage, rental, transportation or supply of an article of trade or commerce or in the price of insurance. Subsect. (1) derives from Sect. 411 of the Criminal Code which was enacted originally in 1889. Although Subsect. (2) provides that no person shall be convicted for participation in an arrangement relating only to such matters as the exchange of statistics or the defining of product standards, etc., Subsect. (3) provides that Subsect. (2) does not apply if the arrangement has lessened or is Iikely to lessen competition unduly in respect of prices, quantity or quality of production, markets or customers or channels of distribution, or if the arrangement "has restricted or is likely to restrict any person from entering into or expanding a business in a trade or industry" Subsect. (4) provides that, subject to Subsect. (5), no person shall be convicted for participation in an arrangement which relates only to the export trade. Subsect. (5) provides that Subsect. (4) does not apply if the arrangement has had or is likely to have harmful effects on the volume of export trade or on the businesses of Canada competitors or on domestic consumers.

Sects. 2 and 33 make it an offence to participate in a merger that has or is likely to have the effect of lessening competition to the detriment or against the interest of the public. These Sections also make it an offence to participate in a monopoly that has been operated or is likely to be operated to the detriment or against the interest of the public.

Sect. 33A deals with what are commonly called "price discrimination" and "predatory price cutting" It provides that a supplier may not make a practice of discriminating among those of his trade customers who come into competition with one another by giving one a preferred price which is not available to another if the second is willing to buy in like quantities and qualities as the first; it also forbids a supplier from selling at prices lower in one locality than in another, or unreasonably low anywhere, if the effect or tendency of such policy is to lessen competition substantially or eliminate competitors or the policy is designed to have such effect.

[^298]Sect. 33B provides that where a supplier grants advertising or display allowances to competing trade customers he must grant them in proportion to the purchases of such customers; any service he exacts in return must be such that his different types of customers are able to perform; and if such customers are required to incur expenses to earn such allowances, such expenses also must be proportionate to their purchases.

Sect. 33C makes it an offence for any person, for the purpose of promoting the sale or use of an article, to make any materially misleading representation to the public concerning the price at which such or like articles have been, will be or are ordinarily sold.

Sect. 34 prohibits a supplier of goods from prescribing the prices at which they are to be resold by wholesalers or retailers or from cutting off supplies to a merchant because of the merchant's failure or refusal to abide by such prices, i.e., the practice of "resale price maintenance" The Section also provides that it shall not be inferred that a person practised resale price maintenance simply because he refused or counselled the refusal of supplies to a merchant if there were reasonable cause to believe and the supplier did believe that the merchant was making a practice of using articles of such supplier as "lossleaders" or as bait advertising or was making a practice of engaging in misleading advertising in respect of such articles or of not providing services that purchasers of such articles might reasonably expect.

The Director of Combines Investigations and Research is responsible for investigating combines and other restrictive practices, and the Restrictive Trade Practices Commission is responsible for appraising the evidence submitted to it by the Director and the parties under investigation, and for making a report to the Registrar General of Canada. When there are reasonable grounds for believing that a forbidden practice is engaged in, the Director may obtain from the Commission authorization to examine witnesses, search premises, or require written returns. After examining all the information available, if the Director believes that it proves the existence of a forbidden practice, he submits a statement of the evidence to the Commission and to the parties believed to be responsible for the practice. The Commission then sets a time and place at which it hears argument on behalf of the Director in support of his statement, and hears argument and receives evidence on behalf of any persons against whom allegations have been made in the statement. Following this bearing, the Commission prepares and submits a report to the Registrar General, ordinarily required to be published within thirty days.

Under the provisions of the Act, general inquiries may be made into restraints of trade which, although not forbidden or punishable, may affect the public interest. The courts, including the Exchequer Court of Canada, in addition to imposing punishment for a contravention of the legislation, may make an order restraining persons from embarking on, continuing or repeating a contravention or directing the dissolution of a merger or monopoly as the case may be. Application also may be made to the courts for such an order in lieu of prosecuting and convicting for a contravention of the legislation. Prosecutions for offences against the substantive provisions of the legislation (other than Sect. 33C which is punishable only on summary conviction) may be taken either in the provincial courts or with the consent of the accused in the Exchequer Court of Canada.

In the period Jan. 1, 1964 to June 30, 1966, the following reports of inquiries under the legislation were published:-
(i) Alleged Combine in the Matter of a Call for Tenders by the Town of Duvernay for the Construction of Sewers and Water Mains.
(2) Sale of Plumbing and Heating Supplies and Related Products in the City of Montreal and Elsewhere in the Province of Quebec.
(3) Production, Distribution and Supply of Newspapers in the Sudbury-Copper Clifi Area.
(4) Distribution, Supply and Sale of Plumbing Supplies and Related Products (Alberta).
(5) Road Surfacing in Ontario.
(6) Ottawa Milk Prieing, November 1861.
(7) Pricing Practices in the Pencil Industry.
(8) Monopoly in Distribution of Propane-British Columbia.
(9) Thomson Newspapers' Acquisition of the Fort William Times-Journal.
(10) Shipping Conference Arrangements and Practices.
(11) Street Paving Tenders in the City of Hull.
(12) The John Street Pumping Station Contract, Metropolitan Toronto.
(13) Distribution and Pricing of Pesticides.
(14) Pricing Practices of Miss Mary Maxim Ltd.
(15) Pricing of Ready-Mixed Concrete, Windsor, Ontario.

These reports and copies of the annual reports under the Act may be obtained from the Queen's Printer or the office of the Director of Investigation and Research, Combines Investigation Act, Department of the Registrar General, Ottawa.

## Section 3.-Control and Sale of Alcoholic Beverages

The retail sale of alcoholic beverages in Canada is controlled by provincial and territorial government liquor control authorities. Alcoholic beverages are sold directly by most of these liquor control authorities to the consumer or to licensees for resale. However, in some provinces beer and wine are sold directly by breweries and wineries to consumers or to licensees for resale. During the year ended Mar. 31, 1965, provincial government liquor control authorities operated 1,101 retail stores.

Table 1 shows revenue from administration of liquor control by provincial and territorial governments. Details are given in DBS report, The Control and Sale of Alcoholic Beverages in Canada (Catalogue No. 63-202).

## 1.--Provincial Revenue from Administration of Liquor Control, Years Ended Mar. 31, 1964 and 1965


#### Abstract

Nort.-Figures include revenue collected directly by the provincial and territorial governments as well as revenue of the liquor suthorities, but exclade reveaue resulting from a general retail sales tax on alcoholic beverages levied by eight provinces.


| Province or Territory | 1964 |  |  | 1965 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Net Income from Sales ${ }^{1}$ | Sales Tax. <br> Licences and Permits, and Other | Totel | Net Income from Sales ${ }^{1}$ | Salea Tax, <br> Licences and Permits. and Other | Total |
|  | \$000 | 8 \%00 | \$'000 | \$'000 | \$'000 | \% 000 |
| Newfoundland. | 2,783 | 2,634 | 5.417 | 3.408 | 4,224 | 7.632 |
| Prince Edward Island. | 1,498 | 515 | 2,013 | 1,684 | 591 | 2,275 |
| Nova Scotia. | 13,066 | 379 | 18,445 | 13,662 | 405 | 14,067 |
| New Bronswick | 10,099 | 318 | 10,417 | 11,422 | 364 | 11,786 |
| Ontarec | 45,600 | ${ }_{27}^{20,036}$ | 65,686 98.379 | 39,623 <br> 84 <br> 920 | 20,930 | 64,581 114,536 |
| Manitolo. | 13,233 | 3, 440 | 16,673 | 15,412 | 3,409 | 18, 821 |
| Saskatchewan. | 15,711 | 391 | 16,102 | 16,765 | 416 | 17,181 |
| Alberta. | 25.807 | 1,628 | 27,485 | 26,640 | 1,691 | 28,33] |
| British Columbia | 32, 514 | 605 | 33,120 | 35,129 | 626 | 35,755 |
| Yukon Territory. | 815 | 113 | 1,028 | 880 | 116 | ${ }^{996}$ |
| Nortbwest Territories. | 903 | 82 | 985 | 988 | 72 | 1,060 |
| Canad | 232,877 | 57,773 | 290,600 | 250,531 | 62,46* | 312,991 |

${ }^{1}$ After provision Ior depreciation on fixed assets and capital expenditure met out of operating income; includes commission on general sales tax collections.

Specified revenue of the Federal Government from alcoholic beverages comprising excise duties, excise taxes, customs duties and certain fees and licences in that connection is shown in Table 2.

## 2.-Specified Revenue of the Federal Government from Alcoholic Beverages, Years Ended Mar. 31, 1561-65

Note.--Figures exclude revenue from the general sales taz which is not available by commodities.

| Nature of Levy | 1981 | 1962 | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 8 '000 | \$000 | \$ 000 | \$ 000 | \$'000 |
| On Splrits. | 139,823 | 143,616 | 153,907 | 153,543 | 165,938 |
| Excise duty | 108,502 | 113,689 | 122,021 | 129,399 | 134,716 |
| Licences | 31,313 | 29,919 | $30.878^{8}$ | 26,137 | 30,914 |
| On Beer.. | 91,165 | 93,257 | 98,354 | 199, 116 | 105, ©85 |
| Excise duty. | 90,971 | 83, 031 | 98,097 | 102,914 | 105, 386 |
| Import duty . . . . . . . | 191 | 203 | 2541 | 199 | 296 |
| On Wine. | 4,930 | 5,2,38 | 6,417 | 5,504 | 6,634 |
| Excise taree. | 3,224 | 3,350 | 3,727 | 3,814 | 4,092 |
| Import duty. . . . . . . . | 1,686 | 1,873 | 2,690 | 1,680 | 2,542 |
| Tetals ${ }^{\text {c }}$ | 283,963 | 242,026 | 257,678 | 264,165 | 277, 957 |

${ }^{1}$ Includes an import surchatge of 15 p.c. al valorem effective from June 25,1962 to Feb, 20, 1963, when it was reduced to 10 p.c. ad valorem. The import aurcharge was removed entirely as of Apt. 1, 1963. ${ }^{2}$ Drawbacks and refunds of duties and tares have not been deducted.

Table 3 shows the value of sales of alcoholic beverages in $1963-65$ but it should be noted that these figures do not always represent the final retail selling price of alcoholic beverages to the consumer because, when sold to licensees, only the selling price to licensees is known.
3.-Value of Sales of Alcoholic Beverages, Years Ended Mar. 31, 1363-65

| Province or Territory | Spirits |  |  | Wines |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1963 | 1964 | 1965 | 1963 | 1964 | 1965 |
|  | \% 000 | $\$^{\prime} 000$ | \$000 | \$'000 | $8{ }^{\prime} 000$ | \$000 |
| Newfoundtand. | 6,353 | 6,683 | 7,421 | 620 | 635 | ${ }^{831}$ |
| Prince Edward Ialand. | 2,828 | 2,939 | 3,308 | 308 | 345 | 367 |
| Nova Seotis. | 17, 868 | 18, 483 | 10,504 | 2,996 | 2.902 | 2.914 |
| New Brunswick | 12,733 | 13.094 | 15.177 | 2.579 | 2,764 | 2,741 |
| Quebec, | 103,479 | 109.084 | 94,979 | 19,876 | 21,259 | 19,339 |
| Ontario. | 185,461 | 203,356 | 222,104 | 23,696 | 26.287 | 29,752 |
| Manitoba. | 23,355 | 24,434 | 25,890 | 3,089 | 3,282 | 3,597 |
| Saskatchewan. | 18,986 | 20,855 | 22,431 | 3,120 | 3,350 | 3,607 |
| Alberta. | 39,023 | 46,907 | 42,559 | 4,532 | 5,064 | 5. 606 |
| British Columbia | 56,929 | 39,595 | 64,825 | 7.020 | 7,903 | 9.249 |
| Yukon Territory ...... | 1,099 | 1,032 | 1,040 | 131 | 169 | 168 |
| Northwest Territories | 847 | 987 | 1,060 | 101 | 121 | 158 |
| Canada............. | 468,761 | 501,449 | 524,204 | 67,868 | 74,081 | 77,130 |
|  | Beer |  |  | Totals |  |  |
|  | 1963 | 1964 | 1965 | 1863 | 1964 | 1965 |
|  | * 000 | \$'000 | \$ 000 | \$000 | \$ 000 | \% 000 |
| Newfoundland........ | 12,652 | 13,464 | 14.428 | 19,625 | 20,782 | 22,480 |
| Prince Edward Island. | 1.663 | 1,832 | 2.001 | 4.799 | 5,116 | 5,676 |
| Nors Scotis... | 16.574 | 17,815 | 18,351 | 37,238 | 39, 200 | 40,769 |
| New Rrunswick | 11.322 | 12,540 | 14.026 | 28,634 | 29,398 | 31,944 |
| Ouelbeo. | 115,134 | 118,842 | 134.418 | 238,289 | 249,185 | 248,638 |
| Ontario... | 184, 806 | 191, 540 | 199.797 | 393,963 | 421,183 | 450,653 |
| Manitoba..... | 30.449 | 32,626 | 32,210 | 5S,893 | 60.342 | 61,697 |
| Saskatchewan | 24,454 | 26,166 | 26,616 | 46,560 | 50.371 | 52,654 |
| Alberta...... | 36,673 | 36,641 | 37,044 | 80,228 | 82,612 | 85,209 |
| British Columbia | 45,643 | 49,625 | 50,811 | 109,592 | 117,123 | 124.885 |
| Yukon Territory.,...... | 1,208 | 1,189 | 1,146 | 2,438 | 2.390 | 2,354 |
| Northwest Territories. | 926 | 1,039 | 1,128 | 1,874 | 2.147 | 2,353 |
| Canada. | 481,504 | 543,319 | 531,976 | 1,018,133 | 1,088,889 | 1,129,310 |

Volume of sales, as shown in Table 4, is a more realistic indicator of trends in consumption, although, as a measure of personal consumption by Canadians, it is subject to the same limitations as value sales in respect of purchases by non-residents.
4.-Volume of Sales of Alcoholle Beverages, Years Ended Mar. 31, 1863-65

| Province or Territory | Spirita |  |  | Wines |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1963 | 1964 | 1965 | 1963 | 1964 | 1965 |
|  | '000 gal. | '000 gal. | *000 gal. | '000 gal. | '000 gal. | ${ }^{\prime} 000 \mathrm{gal}$. |
| Newfoundiand. | 207 | 216 | 216 | 72 | 70 | 57. |
| Prince Edward Island.. | 88 | 94 | 103 | 37 | 40 | 54 |
| Nova Scotia. | 571 | 603 | 634 | 371 | 381 | 375 |
| New Brunswick | 382 3,479 | 391 3,695 | 3.061 | 3,436 2 | + 345 | ${ }_{23}^{338}$ |
| Ontario | 6,822 | 7,466 | 7,668 | 3.424 | 3,702 | 3,886 |
| Manitoba. | 778 | 814 | 828 | 425 | . 454 | 485 |
| Sagkatchewan | 631 | 695 | 713 | 461 | 496 | 529 |
| Alberta. | 1,193 | 1,258 | 1,295 | 627 | 696 | 758 |
| British Columbia. | 1,941 | 2,044 | 2,193 | 1,036 | 1,199 | 1,396 |
| Yukon Territory. | 30 | 28 | 27 | 12 | 16 | 14 |
| Northwest Territories. | 21 | 28 | 26 | 8 | 10 | 13 |
| Canada | 16,143 | 17,330 | 17,289 | 9,285 | 10,052 | 9,988 |
|  | Beer |  |  | Totals |  |  |
|  | 1983 | 1964 | 1965 | 1963 | 1964 | 1965 |
|  | ${ }^{2} 000 \mathrm{~g}^{\text {gal. }}$ | '000 gal. | '000 gal. | '000 gal. | *000 gal. | '000 gal. |
| Newfoundland. | 3,619 | 3,893 | 3,688 | 3,898 | 4,179 | 3,941 |
| Prince Edward Island. . | 977 | ${ }_{6}^{622}$ | +686 | + 702 | +756 | 7 ${ }^{883}$ |
| Nova Scotia ........ | 6,043 | 6.625 | 6,875 | 6.985 | 7,609 | 7,884 |
| New Brunswick | 3, ${ }^{\text {3, }} 831$ | 4,417 80,635 | 5.216 85,317 | 4, 83, 888 | 8,153 | 90,661 |
| Quebec. | 98,492 | ${ }_{99} 890$ | 103,871 | 105,738 | 110,808 | 115,225 |
| Manitobs | 12,907 | 13.768 | 13,442 | 14,110 | 15,086 | 14,755 |
| Saskatchewan. | 10,625 | 11.345 | 11.467 | 11,717 | 12,536 | 12,709 |
| Alberta. | 17,610 | 18,451 | 18,679 | 19,430 | 20,405 | 20.732 |
| British Columbia. | 21,888 | 24,049 | 2才,406 | 24,885 | 27,292 | 27,995 |
| Yukon Territory. | 265 | 264 | 266 | 307 | 308 | 307 |
| Northwest '「erritories. . . . | 219 | 243 | 263 | 248 | 279 | 302 |
| Canada. | 251,95\% | 264,00\% | 274,196 | \%77, 330 | 281,424 | 301,393 |

## Section 4.-Miscellaneous Aids or Controls

The National Energy Board.-The National Energy Board was established by the National Energy Board Act, 1959 (SC 1959, c. 46) for the broad purpose of assuring the best use of energy resources in Canada. The Board is responsible for the regulation in the public interest of the construction and operation of oil and gas pipelines subject to the jurisdiction of the Parliament of Canada, the tolls charged for transmission by such pipelines, the export and import of gas, the export of electric power and the construction of those lines over which such power is exported. The Board is also required to study and keep under review all matters relating to energy within the jurisdiction of the Parliament of Canada and to recommend such measures as it considers necessary or advisable in the public interest
with regard to such matters. The Act also authorizes the extension of the export and import provisions to oil upon proclamation by the Governor in Council. The Board, which reports to the Minister of Energy, Mines and Resources, consists of a chairman, a vicechairman and three other members.

The National Oil Policy, announced in 1961, had the initial objective of attaining certain target levels of oil production, including natural gas liquids. Production, which in 1960 had averaged only $544,000 \mathrm{bbl}$./day, averaged an estimated $923,000 \mathrm{bbl} . /$ day in 1965 , an increase of almost 70 p.c. This increase was achieved by greater use of Canadian oil in domestic markets west of the Ottawa Valley and by extension of export sales to the United States and, as a result of the co-operation of the industry, the objectives of the Policy were achieved largely without formal regulation. The National Power Policy, announced in 1963, stressed the need for taking full advantage of evolutionary changes in the power industry for the provision of abundant electric energy at lowest possible cost and for a flexible export policy that would permit long-term export of large blocks of power to the United States to assist in the immediate development of large-scale Canadian power projects and the strengthening of Canada's balance-of-payments position. In pursuance of these aims, the Board co-operates with other agencies in the consideration of interprovincial and international interconnection of electric power systems.

During 1965, the work of the Board included the issuing of 629 certificates, licences and orders, compared with 574 in 1964 . Following public hearings, six certificates were issued authorizing the construction of additional oil pipeline facilities and a pipeline to transport liquid petroleum products, and one certificate was issued authorizing the construction of a new international power line; the licences and orders issued concerned the export of gas and electric power, the import of gas, the export of butanes by pipeline and the exemption orders, the latter relating to the construction of pipelines or branches or extensions not exceeding 25 miles in length. The Board also issued numerous orders relating to protection and safety in pipeline operation and carried out field inspections relating to the pressure-testing of new gas and oil pipelines, gas compressor and oil-pumping facilities and other pipeline installations. The financial aspects of operations of pipeline companies under the Board's jurisdiction received continual scrutiny and the rates charged by oil pipeline companies and the contractual arrangements for the purchase, sale and transportation of gas by gas pipeline companies remained under continual review.

During the year, the research work of the Board included: the study of project evaluation and rating procedures; the development of computer programs to simulate gas pipelines, optimize the design of a gas pipeline and schedule pipeline expansions and additions; and, in co-operation with other Government agencies, the design of a general framework for an activity-oriented regional model of the Canadian economy which, among other functions, will permit the rapid evaluation of possible changes in the great number of engineering, economic or policy factors that affect the energy sector of the Canadian economy. In addition, the Board was involved in several special studies, including those on the Lower Nelson River power sites, the St. John River power development, and the massive power failure of Nov. 9, 1965 involving Ontario and the eastern United States. The Board continued work on its comprehensive forecast of all forms of energy and supply and demand in Canada and also continued to co-operate, in energy matters, with the Canadian Standarda Association Sectional Committee, the Emergency Supply Planning

Branch of the Department of Defence Production, the Petroleum Planning Committee of the NATO Wartime Oil Organization and the Organization for Economic Co-operation and Development.

Trade Standards.*-The Standards Branch of the Department of Trade and Commerce consolidates under one Director the administration of the National Trade Mark and True Labelling Act, the Precious Metals Marking Act, the Weights and Measures Act, the Electricity Inspection Act, and the Gas Inspection Act.

Commodity Standards.-On Nov. 26, 1949, Parliament passed the National Trade Mark and True Labelling Act (RSC 1952, c. 191) which provides a framework for the development of the National Standard and true labelling in order to circumvent public deception in advertising. In brief, the use of the National Standard is voluntary and compliance with commodity standards affects only those manufacturers who desire to use the national trade mark. This is exemplifed in the National Trade Mark Garment Sizing Regulations which were passed on Mar. 16, 1961. In addition, where manufacturers descriptively Iabel any commodity or container, it must be labelled accurately to avoid public deception. The regulation applying to the labelling of fur garments, for example, has been established as a code of fair practice throughout the merchandising field.

Under the terms of the Precious Metals Marking Act, 1946 (RSC 1952, c. 215), commodities composed of gold, silver, platinum or palladium may be marked with a quality mark describing accurately the quality of the metal. Where such mark is used, a trade mark registered in Canada or for which application for registration has been made must also be applied. Gold-plated or silver-plated articles may also be marked under certain conditions outlined in the Act. The inspection staff of the Standards Branch is engaged in the examination of advertising matter, in verifying the quality of articles offered for sale, and in checking the marks applied.

Weights and Measures.-The Weights and Measures Act (RSC 1952, c. 292) prescribes the legal standards of weight and measure for use in Canada; it also requires control of the type of all weighing and measuring devices used for commercial purposes and their periodic verification and surveillance directed toward the elimination of sales by short weight or short measure. During 1965, 661,133 prepackaged articles were checked for weight or measure and 487,582 inspections of devices were made.

Electricity and Gas Inspection.-Responsibilities of the Standards Branch, under the Flectricity Inspection Act (RSC 1952, c. 94) and the Gas Inspection Act (RSC 1952, c. 129) comprise the testing and stamping of every electricity and gas meter used throughout Canada for billing purposes, the object being to ensure the correct measurement of all electricity and gas sold. Canada is divided into 20 districts for administration of the two Acts and the staff numbers 212. During the year euded Mar. 31, 1965, 1,506,821 meters were tested. In 1964, there were $5,981,778$ electricity meters and $1,590,546$ gas meters registered in Canada.

Patents. $\dagger$-Letters patent are issued subject to the provisions of the Patent Act (RSC 1952, c. 203), effective since 1935. Applications for protection relating to patents should be addressed to the Commissioner of Patents, Ottawa.

[^299]5.- Patents Applied for, Granted, etc., Years Ended Mar. 31, 1961-65


The number of Canadian patents granted increased fairly steadily each year from 4,522 at the beginning of the century to 23,451 in the year ended Mar. 31, 1965. Roughly, 68 p.c. of the patents granted resulted from inventions made by residents of the United States, 8 p.c. by residents of Britain and other Commonwealth countries and 5 p.c. by residents of Canada. Printed copies of patents issued from Jan. 1, 1948 to date are available at a nominal fee. The Canadian Patent Office Record gives a brief digest of each patent.

Canadian and foreign patents may be consulted at the Patent Office Library. The Library has records of British patents and abridged specifications thereof from 1617 to date, and of United States patents from 1845 to date, as well as many patents, indexes, journals and reports from Australia, New Zealand, South Africa, India, Pakistan, France, Belgium, Austria, Norway, Mexico, Italy, Sweden, the Netherlands, Switzerland, Japan, Egypt, Germany, Ireland, Colombia, Czechoslovakia and Yugoslavia.

Copyrights, Industrial Designs and Timber Marks.*-Copyright protection is governed by the Copyright Act (RSC 1952, c. 55) in force since 1924. Protection is automatic without any formality. However, a system of voluntary registration is provided. Application for registration should be addressed to the Commissioner of Patents, Ottawa.

The Act sets out the qualifications for a copyright and its duration: "Copyrights shall subsist in Canada in every original literary, dramatic, musical and artistic work, if the author was, at the date of the making of the work, a British subject, a citizen or subject of a foreign country which has adhered to the Berne Convention and the additional Protocol or resident within Her Majesty's Dominions. The term for which the copyright shall subsist shall, except as otherwise expressly provided by this Act, be the life of the author and a period of fifty years after his death."

Canada belongs to the Universal Copyright Convention. This means that the works of Canadian authors are protected in the United States without the formality of compulsory registration or the obligation of printing in the United States, provided that, from the first publication, the work bears in a prominent place the following identification: (©), followed by the name of the proprietor and the year of publication.

Copyright protection is extended to records, perforated rolls, cinematographic films, and other contrivances by means of which a work may be mechanically performed. The intention of the Act is to enable Canadian authors to obtain full copyright protection in Canada, in all parts of the Commonwealth, in foreign countries of the Copyright Union and in the United States. Protection of industrial designs and of timber marks is afforded under the Industrial Design and Union Label Act and the Timber Marking Act. Registers of such designs and marks are kept by the Copyright Branch of the Patent Office.

[^300]
## 6.-Copyrights, Industrial Designs and Timber Marks Registered, Years Ended Mar. 31, 1361-65

| Item | 1961 | 1962 | 1963 | 1984 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Copyrights registered................... . No. | 6,381 | 6,479 | 7,279 | 7,098 | 7,244 |
| Industrial designs registered. . | 795 | 684 | 788 | 814 | 846 |
| Timber marks registered. . . . . . . . . . . . . . . | - | 1 | 3 | 2 | 1 |
| Assignments registered. | 1,019 | 1,213 | 1.279 | 1,165 | 1,021 |
| Fees received, net.......................... \% | 27.416 | 28,634 | 31,145 | 31,040 | 32,818 |

Trade Marks.*-The Trade Marks Office, a Branch of the Department of the Registrar General of Canada, administers the Trade Marks Act (SC 1952-53, c. 49) which covers all legislation concerning the registration and use of trade marks and supersedes from July 1, 1951, former legislation enacted under the Unfair Competition Act, the Union Label Act and the Shop Cards Registration Act. Correspondence relating to an application for registration of a trade mark should be addressed to the Registrar of Trade Marks, Ottawa.

Applications are advertised for opposition purposes in the Trade Marks Journal, a weekly publication that also gives particulars of every registration of a trade mark and every registration of a registered user. The required fee payable on application for registration of a trade mark is $\$ 25$, for advertisement of an application $\$ 15$ and for registration of a person as a registered user of a trade mark, $\$ 20$.
7.-Trade Marks Registered, Years Ended Mar. 31, 1961-*5

| Item | 1961 | 1982 | 1963 | 1984 | 1885 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Trade marks registered.................... . No. | 4,524 | 4,438 | 4,620 | 4,905 | 4,824 |
| Trade mark registrations assigned......... . * | 3,115 | 3,335 | 2,987 | 3,584 | 3,685 |
| Trade mark registrations renewed......... "' | 1,748 | 1,961 | 2,657 | 3,105 | 2,821 |
| Certified copies prepared................. | 1,407 | 1,412 | 1,529 | 1,415 | 1,866 |
| Fees received, net. . . . . . . . . . . . . . . . . . . | 305,036 | 33\%, 212 | 346,387 | 363,481 | 388,652 |

Subventions and Bounties on Coal. $\dagger$-A major problem of the Canadian coal mining industry arises from the fact that its fields are situated far distant from the main consuming markets of the Provinces of Ontario and Quebec while these markets lie in close proximity to the bituminous and anthracite fields of the United States. Transportation subventions, which have been maintained in varying degree during the past 30 years, were designed to further the movement of Canadian coals by equalizing as far as possible their laid-down costs with the laid-down costs of imported coals in various market areas. Since 1963, an addition to subvention regulations has also enabled eastern Canadian coals to be made competitive with imported residual fuel oils in the Atlantic Provinces and the Province of Quebec. Subvention assistance is authorized by annual Parliamentary vote and payments are administered in accordance with regulations established by Orders in Council.

[^301]
## 8.-Ebpenditure for Coal Subventions, by Province, 1961-65

Nore.-Tonngges and expenditures shown in a given year, being on a calendar-year basis, are not necessarily in direct relationship; certain of the amounts include adjustments on movements of previous years.

| Province | 1961 | 1962 | 1963 | 1584 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Nova Scotia. ................................ . \%n | 2,323,684 | 2,191, 038 | 2,428,819 | 2,836,571 | 3,465,093 |
| 8 | 14,208,2071 | 14,589,764 | 14,442,122 | 12,780,461 | 21,569,607 |
| New Brunswick.......................... ton | 140,201 | 111,186 | 191,765 | 407.120 | 582, 192 |
| 8 | 227, 129 | 221,984 | 540, 351 | 1,263,668 | 1,808,219 |
| Saskatchewsn............................ ton | 104, 897 | 82.511 | 89,311 | 128,215 | 176,224 |
| Alberta and enatern Britioh Columbia | ${ }_{38}^{93,181}$ | ${ }_{67,359}$ | 65,542 | 93,415 | 122,547 |
| Alberta and eastern Britieb Columbia..... ton | 39, 171 | 57,539 | 63,348 | 51, 298 | 65,008 |
| Britigh Columbia and Alberta export..... ton | 96,680 | 150.595 | 172,782 | 145,545 | 205,071 |
| British Columbia and Alberta export. ..... ton | $\begin{array}{r} 719,840 \\ 3,239,279 \end{array}$ | 634,855 $2,403,653$ | 718,740 $2.323,118$ | $1,001,230$ $2,911,292$ | $1,060,311$ $2,964,107$ |
| Totals. . . . . . . . . . . . . . . . . . . . . . . totn | 3,382, 763 | 3,081,029 | 3,489,951 |  | 8,348,826 |
| (1) | 17,854,4561 | 17,433,355 | 17,543,915 | $17,194,381$ | 26,669,551 |

${ }^{1}$ Includes $\$ 500,000$ paid by the Nova Scotia Government as its share of the joint cost of certain Nova Scotia subvention payments.

The Canadian Coal Equality Act (RSC 1952, c. 34), which implemented one of the recommendations of the Royal Commission on Maritime Claims (1926), was designed to assist the Canadian steel industry and only incidentally affects coal. It provides for the payment of 49.5 cents per ton on bitumirous coal mined in Canada and converted into coke to be used in the Canadian manufacture of iron and steel. Bounties paid under this authority for the years 1961-65 were as follows:-

|  | Item |  | 1981 | 1962 | 1963 | 1984 | 1865 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Quantity |  | ton | 457,950 | 420,036 | 482,406 | 472,968 | 337,302 |
| Amount. |  | 5 | 226.685 | 207,918 | 238,791 | 234,119 | 166,964 |

## PART III.-BANKRUPTCIES AND COMMERGIAL FAILURES

Two series of figures are included in this part which, although closely related as far as subject matter is concerned, cover different aspects of the field of bankruptcies and commercial failures. The first, under the beading of "Administration of Bankrupt Estates" is limited to the supervision, by the Superintendent of Bankruptcy, of the administration of bankrupt estates under the Bankruptcy Act (including the Farmers' Creditors Arrangement Act); it gives information on the amounts realized from the assets as established by debtors and indicates that values actually paid to creditors are invariably very much lower than such estimates alone would imply. It can therefore be assumed that this applies in even greater degree to the more extended fields covered in the second section under the heading of "Returns under the Bankruptcy and Winding-Up Act" which is compiled by the Dominion Bureau of Statistics. This series is limited to bankruptcies and insolvencies made under federal legislation (the Bankruptcy Act and the Winding-Up Act) and, since 1955, includes business failures only (see p. 939). The figures of assets and liabilities are estimates made by the debtor and, because they are not made uniformly, should be accepted with reservations.

The Bankruptcy Act, which became law in 1949 and has since been amended on a number of occasions, was again amended by SC 1966, c. 32. This amendment was instigated by many recent exposures and suggestions of illegal and improper practices by
persons who participate in some form of bankruptcy proceedings or administration, or who may be principals such as a debtor, the insolvent person, or a creditor. The amendment is not a complete revision of the Bankruptey Act but is an interim measure designed to provide direct and immediate authority in the field of investigation and inquiry and to tighten the procedures and requirements in other areas, such as that of proposals which an insolvent person may make to his creditors or which a bankrupt may make to his creditors in the course of the administration of the estate. In other words, the amendment is intended to provide remedies in situations where it has been shown by experience that abuses of the bankruptey process are most likely to occur, to correct abuses that have occurred in the administration of small estates and to provide special measures for the orderly payment of debts, thus protecting the public by the elimination of fraudulent practices.
1.-Summary Statistics of Estates Closed during $\mathbf{1 5 4 4}$ under the Bankruptey Aet

| Province or Territory | Bankruptcies ondeb Genrral Provigions of the Agt ${ }^{2}$ |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Estates Closed | Assete as Estimated by Debtors | Liabilities as Estimated by Debtors | Reslization by Trustee | Costs of Administration | Costs. s Percentage of Realization |
|  | No. | 5 | \$ | \% | \$ |  |
| Nfd. | - | O | - |  |  | 12 |
| P.E.S. | ${ }_{19}^{8}$ | 190,094 $2.736,734$ | 688,762 $3,988,485$ | 93,797 575,449 | 10,902 | 12 |
| N.B. | 13 | 2.161,045 | 3,343,902 | 49,358 | 15,039 | 31 |
| Que. | 1,426 | 17.040,244 | 36,449,096 | 4,084,033 | 1,889,588 | 41 |
| Ont. | 1,229 | 31,706.117 | 57,470,353 | 12, 204, 272 | 2,254, 172 | 18 |
| Man. | 38 | 2,369,664 | 2,955,936 | 151,734 | 63.854 | 42 |
| Sask. | 33 | 200,341 | 794,495 | 67,872 | 24,714 | 36 |
| Alta. | 92 | 4,786,501 | 8, 080.437 | 2,033,061 | 445,009 | 22 |
| B.C. | 113 | 7,392, 080 | 12,698,668 | 2,342, ${ }^{\text {, }} 777$ | 574.986 | ${ }_{57}^{24}$ |
| Totals. | 1 | 58, 880 | 151,418 | 5,473 | 3,100 |  |
|  | 2,972 | 66,648,322 | 12\%,622,552 | 21, 607, 321 | 5,184,595 | 24 |
|  | Bankruptcies thider General Prontions of tee Act |  |  | Proposals under Sect. 27(1) (a) |  |  |
|  | Paid to Creditors | Retained by Secured Creditors | Average Percentage Recovered by Creditors | Proposals Closed | Unsecured Liabilities as Estimated by Debtors | Paid to Unsecured Creditors |
|  | 8 | 8 |  | No. | \$ | * |
| Nfld. | - | -7 | $\cdots$ | - | - | 一 |
| $\stackrel{\text { P.E.I. }}{ }$ | 82,805 472,328 | 72.130 784.252 | ${ }_{31}^{22}$ | 1 | $\overline{34,445}$ | 9,620 |
| N.B. | 34,319 | 56,971 | 27 | - |  | , |
| Que. | 2,394,445 | 7,770.291 | 28 | 127 | 5.979,567 | 1,228, 103 |
| Ont. | 9,050,100 | 12,847,799 | 40 | 79 | 8,964, 434 | 1,624,960 |
| Man. | 87,880 | 1,097,143 | 40 | 2 | 41,588 | 13,405 |
| Sask | 43,158 | 65,225 | 14 | 3 | 256, 521 | 40,920 |
| Alta. | 1,588,052 | 827,549 | 27 | - |  |  |
| B.C. | 1,767,936 | 2.646,768 | 35 | 6 | 1,275,883 | 269,605 |
| N.W.T | 2.373 | $\rightarrow$ | 2 | - | - | - |
| Totals. | 16,403,396 | 75,948,128 | 34 | 218 | 16,552,448 | 3,186,613 |

[^302]Returns under the Bankruptcy and Winding-Up Acts.*-The DBS statistics concerning bankruptcies and insolvencies cover only the failures coming under federal legislation, i.e., the Bankruptcy Act and the Winding-Up Act. The figures of Table 2 cover business failures only, excluding failures of individuals such as wage-earners, salesmen and executive personnel.
*Prepared by the Businesg Finance Division, Dominion Bureau of Statistics.
2.-Bankruptcies and Insolvencies under Federal Legislation, by Province, 1956-65

| Year | Atlantic Provinces | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No. | No. |
| 1956....................... | 37 | 1,265 | 507 | 23 | 34 | 41 | 60 | 1,967 |
| 1057....................... | 54 | 1,359 | 630 | 26 | 32 | 55 | 57 | 2.213 |
| 1958........................ | 36 | 1,376 | 545 | 28 | 18 | 51 | 71 | 2,125 |
| 1959........................ | 36 | 1,366 | 658 | 26 | 20 | 47 | 76 | 2,229 |
| 1960. | 48 | 1,638 | 014 | 34 | 28 | 46 | 120 | 2,328 |
| 1981........................ | 47 | 1,450 | 932 | 39 | 25 | 62 | 104 | 2,659 |
| 1962........................ | 33 | 1,694 | 1,177 | 47 | 36 | 94 | 109 | 3,190 |
| 1963........................ | 60 | 1,987 | 1,389 | 45 | 37 | 67 | 92 | 3,677 |
| 1904........................ | 67 | 1,872 | 1,281 | 53 | 30 | 80 | 116 | 3,499 |
| 1965....................... | 43 | 1,748 | 1.248 | 41 | 22 | 103 | 90 | 3,295 |

## 3.-Bankruptcies and Insolvencies under Federal Legislation, by Branch of Business, 195c-65

| Year | Agriculture. <br> Forestry, <br> Fishing. <br> Trappang and Mining | Manu-facturing | Con-etruction | Transportation, Communications and Storage | Trade | Finance and $\underset{\text { Uublic }}{\text { Utities }}$ | Service | Not <br> Classified | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| 1956.. | 58 | 342 | 375 | 83 | 782 | 28 | 248 | 53 | 1,967 |
| 1957. | 89 | 366 | 872 | 109 | 928 | 40 | 244 | 74 | 2,213 |
| 1958. | 67 | 356 | 367 | 105 | 882 | 42 | 295 | 11 | 2,125 |
| 1959. | 81 | 374 | 449 | 76 | 906 | 36 | 307 | - | 2.229 |
| 1860.. | 100 | 323 | 619 | 129 | 1,229 | 65 | 363 | - | 2.828 |
| 1961.. | 86 | 285 | 470 | 118 | 1,234 | 69 | 402 | - | 2,659 |
| 1962. | 93 | 326 | 573 | 143 | 1,496 | 82 | 477 | - | 3,190 |
| 1983. | 111 | 365 | 714 | 166 | 1,634 | 110 | 577 | - | 3,677 |
| 1964. | 146 | 327 | 706 | 181 | 1,492 | 92 | 555 | - | 3,499 |
| 1865. | 151 | 346 | 628 | 198 | 1,359 | 115 | 503 | - | 3,295 |

## 4.-Estimated Liabilities of Bankruptcies and Insolvencies, 1956-65

| Year | Atlantic Provinces | Quebec | Ontario | Prairie Provinces | British Columbia | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 8.000 | \$000 | \$000 | \$ 000 | \%'000 | \$7000 |
| 1956. | 2,049 | 32,704 | 21,842 | 5,223 | 2,437 | 64,254 |
| 1957. | 2,508 | 37,266 | 31,349 | 5,683 | 3,056 | 79,883 |
| 1958. | 4,493 | 40,250 | 17,884 | 4,672 | 5,479 | 72,778 |
| 1959. | 2,302 | 50,034 | 34,158 | 3,866 | 5,429 | 95.786 |
| 1960. | 3,568 | 61,851 | 91,090 | 7,732 | 10,307 | 174,548 |
| 1961. | 4,714 | 49.133 | 48,352 | 7,075 | 7,246 | 116,520 |
| 1962. | 2.566 | 77,002 | 55, 946 | 6, 843 | 7.083 | 149,440 |
| 1963. | 3,788 | 91.467 | 84,260 | 8,330 | 7,757 | 195,602 |
| 1984. | 5,863 | 111,172 | 71,193 | 12.144 | 8,362 | 208,734 |
| 1965. | 2,513 | 107,182 | 258,934 | 15,234 | 9,787 | 393,650 |

5.-Rankruptcies and Insolvencles, by Industry and Economic Area, 1985

| Industry | Atlantic Provinces | Quebec | Ontario | Prairie Provinces | British Columbia | Total | Total Liabilitie |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | \%'000 |
| Primary Industries. . . . . . . . . . . . . . | 1 | 65 | 66 | 11 | 8 | 151 | 8,531 |
| Manufacturing. . . . . . . . . . . . . . | 2 | 202 | 125 | 10 | 7 | 846 | 41,208 |
| Foods and beverages.............. | 1 | 11 | 9 | - | 1 | 22 | 1,015 |
| Textiles............ | - | 3 | 4 | 1 | - | 5 | 2.000 |
| Clothing. | - | 48 | 7 | 1 | 2 | 57 | 7,783 |
| Wood... | 1 | 47 | 33 | 1 | 2 | 88 | 10.666 |
| Paper and allied industries. | - | 18 | 20 | - |  | 38 | 1,827 |
| Primary and fabricated metal, maschinery, transportation equipment. electrical products and non- |  |  |  |  |  |  | 11;697 |
|  | - | 48 | $\stackrel{28}{3}$ | ${ }_{1}^{6}$ | 2 | ${ }_{8}^{84}$ | 11,697 |
| Other industries. . . . . . . . . . . . . . . . . . | - | 25 | 21 | 1 | 1 | 48 | 5,054 |
| Construction. |  | 327 | 240 | 38 | 17 | 628 | 52, 773 |
| General contractors. | 4 | 121 | 91 | 15 | 12 | 243 | 27,962 |
| Special trade contractors. | 2 | 206 | 149 | 23 | $\delta$ | 385 | 24,411 |
| Transportation, Communications and Other Utilities. | - | 100 | 69 | 21 | 3 | 193 | 7,685 |
| Trade. | 28 | 725 | 503 | ¢ | 37 | 1,358 | 65,249 |
| Food. | 6 | 187 | 58 | 7 | 3 | 211 | 8,131 |
| General merchandise.................. | 3 | 15 | 30 | 4 | 1 | 53 | 3,987 |
| Automotive products................ | 7 | 191 | 128 | 20 | 16 | 362 | 12,004 |
| Apparel and shoes.................. | 3 | 110 | ${ }_{56} 64$ | 8 | 4 | 189 | 8, 8.87 |
| Hardware How.................... | ${ }_{3}$ | 74 | 57 | 7 | 4 | 145 | 5,573 |
| Drugs ............................ | - | 7 | 10 | 1 | 1 | 19 | 1,18] |
| Other trades. | 3 | 120 | 100 | 8 | 8 | 239 | 13,000 |
| Finance, Insuranee and Real estate | - | 48 | 62 | 4 | 3 | 115 | 192,883 |
| Service. . . . | 6 | 288 | 183 | 16 | 15 | 503 | 25,771 |
| Education, health and weliare...... | - | 14 | 11 | 1 | 1 | 27 | 1,349 |
| Recreationgl. . . . . . . . . . . . . . . . . . . | 1 | 33 | 13 | , | 5 | $\stackrel{52}{55}$ | 4,184 |
| Business. | - | ${ }^{28}$ | 22 | $\stackrel{3}{10}$ | $\stackrel{3}{5}$ | 55 3 | 3.051 13 |
| Personal. | $\pm$ | 188 20 | 120 | 10 2 | 5 2 | 328 41 | 13,789 3,469 |
| Totals | 43 | 1,748 | 1,248 | 166 | 94 | 3,295 | 308,650. |

## PART IV.-PRICES*

## Section 1.-Index Numbers of Wholesale Prices

The term "wholesale prices" refers to transactions that occur below the retail level. It has more of a connotation of bulk purchase and sale than of any homogeneous level of distribution. Wholesale price indexes and individual price series have numerous uses. One of the most important is in escalator contracts which contain a price adjustment clause. Other major uses include: study of replacement and construction costs in investment projects; analysis of price movements of both individual items and commodity groups in relation to purchases and sales; industrial planning and market analysis; valuation for tax purposes and inventory analysis; and study of changes in physical volume. They are also used by business firms abroad in connection with sales and purchases in Canada.

General Wholesale Index.-. The general wholesale index mainly includes manufacturers' prices but also incorporates those of wholesalers proper, assemblers of primary products, agents and operators of other types of commercial enterprises which trade in commodities of a type, or in quantities characteristic of primary marketing functions. Prices are grouped according to a commodity classification scheme based on chief component material similarities. Indexes classified according to degree of manufacture are also available. In Table 1, the general wholesale index is presented for the period 1938-65. This index is used as a conventional summary figure against which to observe the behaviour of particular price groups such as farm products, raw materials and building materials, for which separate price indexes have been constructed. Table 2 gives, for the years 1956-65, the general wholesale price index and two of its integral classifications-raw and partly manufactured goods, and fully and chiefly manufactured goods; also presented are two related systems-industrial materials and Canadian farm products. Annual price index numbers of non-residential building materials and residential building materials are given for 1956-65 in.Tables 3 and 4, respectively. Indexes at a finer level of detail are published regularly in the DBS monthly publication Prices and Price Indexes (Catalogue No. 62-002), which also contains current series on retail and security prices. Vol. 23 of that publication is a historical summary reaching back to the year 1867 for some series.

A system of wholesale price indexes called Industry Selling Price Indexes $1956=100$, refers exclusively to manufacturing industries and includes approximately 100 industry and 175 commodity indexes. DBS Reference Paper No. 62-515 contains tables, explanatory text, charts and weights relating to these indexes; current indexes are published monthly in Prices and Price Indexes (Catalogue No. 62-002).

* Prepared in the Prices Division, Dominion Bureau of Statistics.
1.-General Wholesale Index Annual Averages, 1938-65
( $1935-39=100$ )

| Year | Average | Year | Average | Year | Average | Year | Average |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1938. | 102.0 | 1945.... | 132.1 | 1852. | 226.0 | 1959. | 230.6 |
| 1939. | 99.2 | 1946. | 138.9 | 1953. | 220.7 | 1960. | 230.9 |
| 1940. | 108.0 | 1947 | 163.3 |  | 217.0 | 1901. | 233.3 |
| 1941. | 116.4 | 1948 | 193.4 | 1955. | 218.9 | 1962. | ${ }_{244}^{2 \cdot 10.0}$ |
| 1943. | 123.0 127.9 | 1949 | 198.3 | 1956. | 223.6 227.4 | 1963 1904 | 244.6 |
| 1944. | 130.6 | 1951 | 240.2 | 1958. | 227.8 | 3965 | 250.4 |

The general wholesale index averaged 2.0 p.c. higher in 1965 , rising to 250.4 from the 1964 average of 245.4 . The raw and partly manufactured goods index advanced 2.4 p.c. and the fully and chiefly manufactured goods index was 1.9 p.c. higher. The industrial materials index increased 0.2 p.c. over the same period and the Canadian farm products index rose 4.4 p.c. The latter series, however, is based on preliminary indexes for field products and total farm products, pending receipt of final participation payments from the Canadian Wheat Board.

## 2.-Annual Inder Numbers of Wholesale Price Groups, 1956-65 <br> ( $1935-39-109$ )

| Year | General Wholesale Inder | Raw and Partly <br> Manuigetured Goods | Fully and <br> Chiefly <br> Manatactured Gooda | Industrial Materiale | Canadian Farm Products |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Field | Animal | Total |
| 1956. | 225.6 | 215.8 | 231.5 | 248.2 | 181.6 | 246.9 | 214.2 |
| 1957. | 227.4 | 209.4 | 237.9 | 240.3 | 169.2 | 258.0 | 213.6 |
| 1958. | 227.8 | 209.3 | 238.3 | 229.8 | 171.4 | 274.5 | 222.9 |
| 1959. | 230.6 | 210.9 | 241.6 | 240.2 | 176.1 | 271.6 | 223.8 |
| 1960. | 230.9 | 209.6 | 242.2 | 240.4 | 189.1 | 264.1 | 226.6 |
| 1961. | 233.3 | 212.6 | 244.5 | 243.2 | 191.7 | 270.0 | 230.9 |
| 1962. | 240.0 | 223.8 | 249.0 | 248.0 | 195.5 | 285.0 | 240.8 |
| 1963. | 244.6 | 226.9 | 254.2 | 253.5 | 197.2 | 275.4 | 236.3 |
| 1964. | 245.4 | 225.7 | 256.4 | 258.3 | 198.2 | 267.3 | 232.7 |
| 1965. | 250.4 | 231.2 | 261.3 | 258.7 | 186.4 | 289.3 | 242.9 |

The price indexes of building materials* continued to rise in 1965. The non-residential index $(1949=100)$ advanced to 146.8 and was 5.2 p.c. higher than the 1964 average of 139.6. The residential building materials index $(1935-39=100$, arithmetically converted to the base $1949=100$ for comparability with the non-residential index) rose 4.5 p.c. over the same time period to 148.9 from 142.5 .

[^303]3.-Annual Price Index Numbers of Non-residential Building Materials, 1956-65
(1949=100)

| Year | Composite Index | Principal Componenta |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Steel and Metal Work | Plumbing, Heating and Other Equipment | Electrical Equipment and Fistures | Aggregate, Cement and Concrete Mir | Lumber and Lumber Products | Blocks, Brick and Stone | Tile |
| Group weiget as a fercentade of тотаL. ............. | $\cdots$ | 20.1 | 21.4 | 11.5 | 11.1 | 10.5 | 9.1 | 3.8 |
| 1956. | 128.0 | 139.0 | 123.4 | 123.6 | 117.0 | 131.5 | 180.3 | 120.3 |
| 1957................ | 130.0 | 147.7 | 124.1 | 118.4 | $\underline{19.4}$ | 128.7 | 134.0 | 118.5 |
| 1958. | 129.8 | 150.9 | 123.8 | 114.0 | 119.6 | 12 T .8 | 135.7 | 118.2 |
| 1959. | 131.7 | 152.6 | 126.0 | 119.2 | 118.6 | 131.3 | 137.4 | 118.3 |
| 1860................ | 132.3 | 152.9 | 126.7 | 119.5 | 119.8 | 129.0 | 139.1 | 121.0 |
| 1961. | 131.1 | 153.2 | 126.3 | 113.8 | 119.8 | 127.6 | 133.0 | 123.9 |
| 1962............... | 131.9 | 153.3 | 127.4 | 114.0 | 122.0 | 130.8 | 130.9 | 125.0 |
| 1963................ | 335.1 | 157.1 | 127.1 | 118.6 | 126.0 | 136.6 | 135.2 | 128.9 |
| 1964............... | 139.8 146.8 | 164.2 177.7 | 129.4 137.1 | 120.3 120.5 | 128.0 133.6 | 147.4 154.6 | 141.9 | 134.3 143.2 |
| 1865............... | 146.8 | 17.7 |  | 120.5 | 10.6 | 104.0) | 149.3 |  |

4.-Annual Price Index Numbers of Residential Building Materials, 1956-65
$(1949=100)$

| Year | Composite Index | Principal Components |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Cement, Sand and Gravel | Brick, Tile and Stone |  | Lath, Plaster and Insulation | Roofing Material | Paint and Glass | Plumb- <br> ing and Heating <br> Equipment | Electrical Equipment and Fixtures | Other Materials |
| Group weight as a perCENTAGE OF TOTAL....... | ... | 7.6 | 5.0 | 42.6 | 11.3 | 2.9 | 3.2 | 18.6 | 3.8 | 5.0 |
| 1956. | 128.5 | 117.9 | 144.9 | 130.5 | 110.8 | 136.3 | 126.3 | 120.9 | 140.5 | 139.5 |
| 1957. | 128.4 | 120.9 | 148.2 | 128.9 | 115.9 | 133.0 | 125.5 | 126.3 | 120.6 | 145.3 |
| 1958. | 127.3 | 123.5 | 148.7 | 127.2 | 118.4 | 123.6 | 126.2 | 127.5 | 107.8 | 145.4 |
| 1959. | 130.0 | 121.1 | 150.9 | 130.7 | 119.3 | 125.6 | 127.7 | 128.5 | 116.3 | 147.1 |
| 1960. | 129.2 | 121.7 | 151.9 | 129.1 | 120.6 | 112.6 | 128.3 | 130.5 | 114.3 | 150.1 |
| 1961. | 128.3 | 120.5 | 145.0 | 128.0 | 122.6 | 107.1 | 131.2 | 131.0 | 112.0 | 149.9 |
| 1962. | 129.7 | 120.5 | 143.6 | 130.4 | 126.2 | 112.0 | 132.9 | 128.6 | 114.0 | 149.4 |
| 1963. | 133.9 | 123.8 | 149.3 | 135.5 | 127.9 | 124.2 | 142.8 | 130.2 | 118.1 | 143.2 |
| 1964. | 142.5 | 127.5 | 154.6 | 146.6 | 134.3 | 132.1 | 149.9 | 134.3 | 120.0 | 148.5 |
| 1965. | 148.9 | 132.4 | 163.2 | 153.8 | 139.1 | 128.0 | 157.3 | 141.2 | 120.1 | 152.5 |

Highway Construction Price Index.-A system of annual base-weighted and cur-rent-weighted bid price indexes $(1956=100)$ relating mainly to provincial highway construction was developed recently, by which price movement is shown for completed units of work such as earth excavation or crushed gravel in place. DBS Reference Paper 62-520 contains tables, explanatory text, charts and weights relating to these indexes. Current indexes are published from time to time in the monthly reports on Prices and Price Indexes (Catalogue No. 62-002).

World Wholesale Price Indexes.-Price changes within different countries have varied widely during the years. Comparisons of Canadian wholesale price indexes with those of other countries are given in Table 5.
5.-Index Numbers of Wholesale Prices in Canada and Other Countries, 1963-65
$(1958=100)$
Source: United Nations Monthly Bulletin of Statistics, June 1966.

| Country | 1963 | 1964 | 1965 | Country | 1963 | 1964 | 1955 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Belgium. | 104 | 109 | 110 | India. | 119 | 134 | 145 |
| Brazil.......................... | 664 | 1,273 |  | Iran ${ }^{1}$.. | 104 | 108 | 111 |
| Britain. | 102 | 106 | 107 | Ireland. | 106 | 113 | 117 |
| Canada. | 107 | 108 | 110 | Korea, Republic of ${ }^{2}$. | 149 | 201 | 221 |
| Chile. | 229 | 345 | 429 | Netherlands. | 101 | 108 | 111 |
| Denmark.................... | 108 | 111 | 115 | New Zealand. | 105 | 110 | 111 |
| Dominican Republic (Santo |  |  |  | Norway...... | 104 | 109 | 112 |
| Domingo).................. | 107 | 105 | 117 | Sweden. | 110 | 115 | 120 |
| France.................. | 117 | 119 | 121 | Switzerland. | 106 | 109 | 109 |
| Germany, Federal Republic of. | 104 | 104 | 107 | Turkey $\begin{aligned} & \text { United Arab Republ }\end{aligned}$ | 143 100 | 142 105 | 154 |
| Greece. | 110 | 114 | 119 | United States.. | 100 | 100 | 102 |

[^304]${ }^{2}$ Base $1960=100$.

## Section 2.-Consumer Price Index*

The purpose of the consumer price index is to measure the movement from month to month in retail prices of goods and services bought by a representative cross-section of the Canadian urban population. For a particular article or service, a price index number is simply the price of the article in one period of time expressed as a percentage of its price in a reference period, usually called a base period. However, indexes for individual goods may be combined to form indexes representing prices of broad groups of goods and services. Thus, the consumer price index relates to the wide range of goods and services bought by Canadian urban families. The index expresses the combined prices of such goods each month as a percentage of their prices in the base period 1949.

The group of goods and services represented in the index is called the index "baskel" and "weights" are assigned to the price indexes of individual items for purposes of combining them into an over-all or composite index. The weights reflect the relative importance of items in expenditures of middle-size urban families with medium incomes. The basket is an unchanging or equivalent quantity and quality of goods and services. Only prices change from month to month and the index, therefore, measures the effect of changing prices on the cost of purchasing the fixed basket. The basket and weights now used in the index are based on expenditures in 1957 of families of two to six persons, with annual incomes of $\$ 2,500$ to $\$ 7,000$, living in cities of 30,000 population or over.
c.-Consumer Price Index Numbers, 1339-66
( $1949=100$ )


The behaviour of the consumer price index during the years of almost continuous economic growth following the end of the Second World War up to 1959 is discussed in the 1962 Year Book at pp. 928-929 and the movement during 1959-64 in subsequent editions.

Between 1964 and 1965 the rate of consumer price rise advanced, averaging 2.4 p.c., with the largest increases evident in health and personal care ( 4.6 p.c.), transportation ( 3.7 p.c.) and food ( 2.6 p.c.). In 1966 the accelerating trend continued with prices averaging 3.7 p.c. over the previous year. The largest increases occurred in food ( 6.3 p.c.), clothing ( 3.8 p.c.) and health and personal care ( 3.1 p.c.).

[^305]
## 7.-Consumer Price Inder Numbers, 1957-66

( $1948=100$ )

| Year | Food | Housing | Clotbing | Tranaportation | Health and <br> Personal Care | Recres. tion snd Reading | Tobaceo and Alcohol | Composite Inder |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Group weiget as a percentabe of total........ | 27 | 32 | 11 | 12 | 7 | 5 | 6 | 100 |
| 1957. | 118.6 | 126.7 | 108.5 | 129.9 | 138.2 | 129.8 | 109.4 | 121.9 |
| 1988. | 122.1 | 129.0 | 109.7 | 133.8 | 145.4 | 138.4 | 110.6 | 125.1 |
| 1959. | 121.1 | 131.4 | 109.8 | 138.4 | 150.2 | 141.7 | 114.0 | 128.5 |
| 1960. | 122.2 | 132.7 | 110.9 | 140.3 | 154.5 | 144.3 | 115.8 | 128.0 |
| 1961. | 124.0 | 123.2 | 112.5 | 140.6 | 155.3 | 146.1 | 118.3 | 129.2 |
| 1962. | 126.2 | 134.8 | 113.5 | 140.4 | 158.3 | 147.3 | 117.8 | 130.7 |
| 1963. | 130.3 | 136.2 | 116.3 | 140.4 | 162.4 | 149.3 | 118.1 | 133.0 |
| 1964. | 132.4 | 139.4 | 119.2 | 142.0 | 167.8 | 151.8 | 120.2 | 135.4 |
| 1965....................... | 135.9 | 140.9 | 121.4 | 1177.3 | 175.5 | 154.3 | 122.3 | 138.7 |
| 1966........................ | 144.5 | 144.7 | 126.0 | 150.8 | 180.9 | 158.7 | 125.1 | 143.9 |

Table 8 gives single commodity price relatives for a number of important items entering into the food component of the consumer price index.

## 8.-Urban Ayerage and Relative Retall Prices of Staple Foods, 1357-66

$(1910=100)$


Consumer Price Indexes for Regional Cities.-Table 9 gives regional consumer price indexes for ten cities or city combinations. These indexes do not show whether it costs more or less to live in one city than in another and should not be used for such comparisons. Their function is to measure percentage changes in retail prices-over a certain time in each city or city combination-of a fixed basket of goods and services representing the level of consumption of a particular group of families.

## 9.-Consumer Price Indexes for Regional Cities, 1957-66

$(1949=100)$

| Year | $\begin{aligned} & \text { St. } \\ & \text { John's, } \\ & \text { Nfld. } \\ & (1951 \\ & =100) \end{aligned}$ | $\begin{aligned} & \text { Halifax, } \\ & \text { N.S. } \end{aligned}$ | Saint John, N.B. | Montreal, Que. | Ottawa, Ont. | Toronto, Ont. | Winnipeg, Man. | Saska-toonRegina, Sask. | Edmon-ton-Calgary, Alta. | Vancouver, B.C. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1957. | 109.4 | 119.8 | 122.6 | 121.8 | 123.2 | 125.2 | 120.0 | 119.1 | 118.8 | 122.6 |
| 1958. | 112.0 | 122.9 | 125.3 | 125.5 | 125.5 | 128.6 | 123.0 | 122.0 | 121.4 | 125.6 |
| 1959 | 114.3 | 125.9 | 127.7 | 126.9 | 126.9 | 128.9 | 123.7 | 123.1 | 123.0 | 127.9 |
| 1960. | 115.5 | 127.2 | 129.2 | 127.9 | 128.6 | 130.4 | 125.6 | 124.4 | 124.1 | 129.0 |
| 1961. | 116.7 | 128.5 | 130.2 | 129.3 | 130.2 | 131.2 | 127.5 | 125.4 | 125.0 | 129.4 |
| 1962....................... | 117.6 | 130.2 | 131.4 | 130.9 | 131.7 | 132.4 | 129.1 | 127.5 | 126.2 | 129.8 |
| 1963. | 120.0 | 131.5 | 133.4 | 133.0 | 134.0 | 134.6 | 130.3 | 128.5 | 127.6 | 131.8 |
| 1964. | 121.3 | 132.0 | 134.8 | 135.1 | 136.0 | 136.9 | 132.3 | 129.8 | 128.2 | 132.7 |
| 1965. | 123.1 | 134.4 | 136.9 | 138.0 | 138.4 | 140.2 | 135.3 | 131.9 | 130.1 | 135.2 |
| 1966. | 126.0 | 138.0 | 140.4 | 142.1 | 143.7 | 146.4 | 139.4 | 135.8 | 134.4 | 138.5 |

World Retail Price Indexes.-In order to place changes in Canadian retail prices in perspective with those occurring elsewhere, Table 10 provides consumer price indexes for selected countries for 1963,1964 and 1965. These indexes measure price changes only within each country and should not be used to compare actual levels of living costs from country to country.

## 10.-Consumer Price Index Numbers in Canada and Other Countries, 1963-65

( $1958=100$ )
Source: United Nations Monthly Bulletin of Statistics, June 1966

| Country | 1963 | 1964 | 1965 | Country | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Belgium | 106 | 111 | 115 | Iran. | 127 | 132 | 135 |
| Brazil (São Paulo) | 675 | 1,266 | 2,048 | Ireland....................... | 110 | 117 | 123 |
| Britain.. | 112 | 115 | 121 | Korea, Republic of (Seoul)... | 155 | 201 | 228 |
| Canada. | 106 | 108 | 111 | Netherlands................. | 113 | 119 | 126 |
| Chile (Santiago) | 274 | 400 | 515 | New Zealand................. | 111 | 115 | 119 |
| Denmark....... | 122 | 126 | 134 | Norway. | 114 | 130 | 125 |
| Dominican Republic |  |  |  | Sweden..................... | 115 | 119 | 118 |
| Domingo).... ${ }^{\text {a }}$ | 110 | 112 | 110 | Switzerland.................. | 111 | 114 157 | 118 |
| France (1962=100). | 105 | 108 | 111 | Turkey (1stanbui) ${ }^{\text {United Arab Republic }}$. ${ }^{\text {a }}$ | 153 99 | 103 | 118 |
| Republic of... Greece ( $1959=100)$ | 111 106 | 114 107 | 118 110 | United States. | 99 106 | 103 107 | 118 |
| India................ | 115 | 131 | 143 |  |  |  |  |

## Section 3.-Consumer Expenditure

A continuing program of surveys of family expenditure in urban areas was begun in 1953, and surveys were conducted since then at two-year intervals up to and including 1959. No expenditure surveys were taken in 1961, the decennial census year, but the regular program was resumed in 1962, when monthly surveys of food expenditure were made throughout the year and a recall survey of the complete budget was made in February and March 1963. Early in 1965 a recall survey of the complete budget was made, referring to the calendar year 1964.

The primary purpose in most of these surveys was to collect information for reviewing and revising, when necessary, the weights of the consumer price index. Therefore the surveys, with the exception of those for 1959 and 1964, have been restricted to cover only the families comparable in composition and income level to the consumer price index target group which was selected for index number purposes from a nation-wide survey conducted in 1947-48. For each of the four survey periods covering 1953, 1955, 1957 and 1962, respectively, the program consisted of a series of monthly surveys in which the major objective was the collection of detailed expenditure data on food, followed by a recall survey of all expenditures and income for the same calendar year. Detailed results for each survey have been published in two series of occasional publications of which the latest are: Urban Family Food Expenditure, 1962 (Catalogue No. 62-524) and Urban Family Expenditure, 1962 (Catalogue No. 62-525).

In the 1959 and 1964 survey programs the monthly surveys were omitted and the recall surveys were enlarged in size and scope, referring in 1959 to all families and individuals in cities with populations of $\mathbf{1 5 , 0 0 0}$ or over, and in 1964 to all families and individuals in eleven cities. The decision to limit the sample in 1964 to selected major cities was based on the desire to produce representative data for individual cities, in contrast to the broader regional representation afforded by the 1959 survey. Summary results of the 1959 survey appear in the 1962 Year Book at pp. 934-937. Table 11 presented here gives 1964 results for families of two or more, classified by family income. Tables showing expenditures for individuals only and for all families and individuals combined will be published in Urban Family Expenditure, 1964.

For the 1964 survey a sample of 3,000 households was drawn from households which had been interviewed earlier in the monthly labour force surveys. The following cities were represented: St. John's, Halifax, Quebec, Montreal, Ottawa, Toronto, Winnipeg, Regina-Saskatoon, Edmonton and Vancouver. The number of usable family records obtained was 2,034 , of which 1,723 were families of two or more. Characteristics of sample families are shown at the beginning of the table in the form of averages and percentages.

The classification of expenditures by income level shows how expenditures vary as family income increases. Although dollar amounts expended increase in all consumption groups as income increases, the proportions of total expenditure going to the basic necessities of food and shelter decline with rising income, reflecting the growing importance of other groups as more income becomes available for discretionary spending and as personal taxes account for a larger share of the family dollar.
(Families of two or more persons)

| Item | $\underset{\text { Classes }}{\text { All }}$ | Income Group |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{aligned} & \text { Under } \\ & \$ 2,500 \end{aligned}$ | $\begin{gathered} \$ 2,500- \\ 2,899 \end{gathered}$ | $\begin{gathered} \$ 3.000- \\ 3,499 \end{gathered}$ | $\begin{gathered} \mathbf{8 3 , 5 0 0 -} \\ 3,999 \end{gathered}$ | $\begin{gathered} \$ 4,000- \\ 4,499 \end{gathered}$ | $\begin{gathered} 34,500- \\ 4,999 \end{gathered}$ | $\underset{5,498}{\mathbf{3 5 . 0 0 0 -}}$ | $\begin{gathered} \mathbf{\$ 5 , 5 0 0 -} \\ 5,999 \end{gathered}$ | $\begin{gathered} \$ 8,000- \\ 6,999 \end{gathered}$ | $\begin{aligned} & \$ 7,000- \\ & 7,899 \end{aligned}$ | $\begin{aligned} & \$ 8,000- \\ & 9,999 \end{aligned}$ | \$10,000+ |
| Family Characteristics- <br> Families in sample.... No. | 1,723 | 98 | 64 | 67 | 91 | 112 | 109 | 146 | 130 | 22.6 | 193 | 239 | 250 |
| Average- ${ }_{\text {Family }}$ aize |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Family size... ...... No. | 3.8 | 2.5 | 2.7 | 3.9 | 3.2 | 3.4 | 3.5 | 3.8 | 3.8 | 3.8 | 3.8 | 4.0 | 4.5 |
| Adults, 65 or over..... " | 0.2 | 0.9 | 0.8 |  | 0.3 | 0.3 | 0.3 | 0.1 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 |
| Adults, 18-64.......... " | 2.2 | 1.1 | 1.3 | 1.8 | 1.9 | 1.9 | 1.8 | 2.1 | 2.1 | 2.2 | 2.3 | 2.5 | 3.0 |
| Children under 16..... * | 1.4 | 0.5 | 0.6 | 1.9 | 1.1 | 1.3 | 1.4 | 1.8 | 2.7 | 1.5 | 1.4 | 1.4 | 1.3 |
| Age of head.......... yrs. | 45.0 | 58.5 | 57.2 | 45.4 | 45.0 | 44.6 | 46.8 | 39.7 | 41.5 | 43.9 | 43.4 | 42.9 | 46.1 |
| Money uncome before taxes.................. \$ | 7,065 | 1,940 | 2,716 | 3,262 | 3,771 | 4,259 | 4,765 | 5,267 | 5,756 | 6,500 | 7,447 | 8,958 | 13,004 |
| Net chanke in assets and liabilities........ ${ }^{5}$ Carners. No. | $280+$ 1.5 | ${ }_{0.4}^{324-}$ | ${ }_{0.9}^{293}$ | $\xrightarrow{300}$ | ${ }_{1.2}^{231-}$ | ${ }_{1.1}^{177}$ | $1.2{ }^{70+}$ | ${ }_{115}^{115}$ |  | $\xrightarrow[1.5]{178+}$ | ${ }_{1.6}^{96+}$ | $545+$ 1.8 | 1,574+ |
| Pereentage- |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Home covners. . | 51 | 48 | 48 | 39 |  |  |  |  | 47 |  |  |  |  |
| Car owners........ | 71 | 19 | 48 | 47 | 58 | 54 | 67 | 71 | 77 | 73 | 81 | 83 | 93 |
| With children under 10..... | 61 | 25 | 28 | 69 | 60 | 59 | 69 | 72 | 71 | 65 | 68 | 63 | 61 |
| With persona 65 or over.... | ${ }_{88} 6$ | ${ }_{61}^{54}$ | 88 | 16 | 19 | 18 | 18 | 5 | 12 | ${ }_{69}^{13}$ | 14 | 11 | 12 |
| Canadian-born. | ${ }_{68}^{68}$ | ${ }_{4}^{61}$ | ${ }_{4}^{68}$ | 76 2 | 75 5 | 69 3 | $\stackrel{65}{8}$ | 72 | 71 10 | 69 16 | 67 24 | ${ }_{32}$ | 21 |
| Average Expenditure- |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Food................ s | 1,476 | 784 | 880 | 1,155 | 1,065 | 1,184 | 1.268 | 1,362 | 1.436 | 1,435 | 1,569 | 1,689 | 2,113 |
| Shelter............... \% | 1,147 | 686 | 780 | 818 | 810 | 933 | 978 | 1,051 | 1,016 | 1,107 | 1,224 | 1.322 | 1,855 |
| Rented.............. \$ | 429 | 307 | 377 | 603 | 486 | 498 | 425 | - 521 | 448 | 489 | 440 | 488 | 348 |
| Owned............ \$ | 484 | 204 | 196 | 121 | 163. | 280 | 324 | 816 | 831 | $\$ 99$ | 480 | 657 | 784 |
| Other ahelter........ | 6\% | 4 | 24 | 8 | 6 | 蛣 | 14 | 27 | 26 | 38 | 61 | 89 | 209 |
| Fuel, light, water . . 5 | 298 | 171 | 184 | 185 | 154 | 188 | 218 | 188 | $21 \%$ | 297 | 297 | 259 | 351 |
| Househeld operation.. \% | 282 | 119 | 190 | 181 | 183 | 186 | 223 | 223 | 223 | 254 | 319 | 338 | 500 |
| Furnishinge and equipment. $\qquad$ | 313 | 49 | 133 | 185 | 162 | $\stackrel{8}{85}$ | 218 | 252 | 278 | 314 | 392 | 407 | 514 |
| Appliances........... \% | 85 | 17 | 41 | 67 | 68 | 54 | 77 | 94 | 94 | 88 | 94 | 104 | 110 |
| Other.............. 8 | 228 | 8 | ${ }^{\text {a }}$ | 88 | 104 | 191 | 141 | 158 | 184 | 226 | 298 | 509 | 404 |
| Clothing.............. $\$$ | 614 | 152 | 211 | 256 | 322 | 385 | 877 | 448 | 503 | 554 | 681 | 813 | 1,188 |
| Transportation........ \$ | 870 | 109. | 364 | 223 | 427 | 439 | 477 | 642 | 857 | 788 | 1,050 | 1,215 | 1,609 |
| Car............... 8 | 733 | 54 | . 278 | 173 | 353 | 356 | 401 | 552 | 775 | 671 | 915 | 1,003 | 1,347 |
| Purchaes........... \$ | 379 | 8 | '135 | 21 | 189 | 145 | 118 | 256 | 499 | \$22 | 619 | 540 | 748 |
| Operation,........ | 554 |  | 148 | 169 | 178 | 211 | 284 | 297 | 936 | 349 | 408 | 464 |  |
| Other transportation Medical care......... \% | 137 277 | 55 128 | 87 176 | 50 155 | 75 $\times \quad 224$ | 83 239 289 | 76 241 248 | 90 248 | $\begin{array}{r}52 \\ 235 \\ \hline\end{array}$ | 116 262 | ${ }_{307}^{138}$ | 211 288 | 282 447 |
| Personal care........... \$ | 161 | ${ }_{60}$ | 79 | ${ }_{87}$ | 101 | - 115 | 124 | 132 | 142 | 155 | 184 | 200 | 201 |


| Recreation............ Reading.......... Education.......... | 230 44 64 | $\begin{array}{r} 50 \\ 22 \\ 4 \end{array}$ | $\begin{aligned} & 62 \\ & 22 \\ & 14 \end{aligned}$ | $\begin{aligned} & 77 \\ & 20 \\ & 14 . \end{aligned}$ | $\begin{array}{r} 108 \\ 34 \\ 33 \end{array}$ | $\begin{gathered} 101 \\ 30 \\ 48 \end{gathered}$ | $\begin{gathered} 147 \\ 36 \\ 28 \end{gathered}$ | $\begin{gathered} 146 \\ 36 \\ 36 \end{gathered}$ | $\begin{array}{r} 202 \\ 38 \\ 35 \end{array}$ | 208 48 48 48 | $\begin{array}{r} 278 \\ 47 \\ 48 \end{array}$ | $\begin{array}{r} 299 \\ 56 \\ 84 \end{array}$ | 470 73 199 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Tobaceo and alcoholic beverages Other. | 279 89 | 88 25 | 137 68 | ${ }_{53}^{189}$ | 175 74 | 188 86 | ${ }_{52}^{231}$ | 244 86 | 275 88 | $\begin{array}{r} 283 \\ 72 \end{array}$ | 320 97 | 327 103 | 428 |
| Totals, Current Consumption. | 5,846 | 2,276 | 3,071 | 3.393 | 3,688 | 4,089 | 4,388 | 4,907 | 5,328 | 5,522 | 6,515 | 7.121 | 9,602 |
| Giftes and contributions Personal taxes.......... Security............. | 200 650 386 | 69 30 55 | 88 42 51 | 62 70 92 | $\begin{aligned} & 112 \\ & 172 \\ & 160 \end{aligned}$ | 131 198 205 | $\begin{aligned} & 147 \\ & 298 \\ & 224 \end{aligned}$ | 128 334 228 | $\begin{aligned} & 136 \\ & 380 \\ & 268 \end{aligned}$ | 192 532 320 | 201 646 356 | 259 886 485 | 400 1,814 717 |
| Totals, Expenditure | 7,031 | 2,497 | 3,261 | 8,417 | 4,182 | 4,028 | 5,463 | 6,597 | 6,110 | 6,566 | 2,719 | 8,602 | 12,533 |
| Percentate Distribution of Fspenditure- |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Food.......... | 16.3 | 28.2 | 23.9 | 22.6 | 19.6 | 20.2 | 19.3 | 18.8 | 16.6 | 18.9 | 15.9 | 15.2 | 16.9 13.2 |
| Rented. | 6.1 | 12.6 | 11.6 | 13.9 | 11.8 | 10.7 | 8.4 | 9.8 | 7.2 | 6.7 | 6.8 | 4.9 | 8.8 |
| Owned. | 8.0 | 8.4 | 8.0 | 8.5 | 8.9 | 6.0 | 6.4 | 6.6 | 6,4 | 6.1 | 6.2 | 6.4 | 6.9 |
| Other shelter | 0.2 | 0.2 | 0.7 | 0,2 | 0.1 | 0.6 | 0.8 | 0.5 | 0.4 | 0.5 | 0.8 | 1.0 | 1.6 |
| Fuel, light, water. | 8.8 | 7.0 | 6.8 | 6.1 | 8.7 | 4.1 | 4.2 | 9.4 | s. 6 | \$. 6 | 3.1 | S. 0 | 2.6 |
| Household operation...... | 4.0 | 4.9 | 4.6 | 5.0 | 3.9 | 4.0 | 4.4 | 4.0 | 3.6 | 8.9 | 4.1 | 3.9 | 4.0 |
| Furnighinge and equipment Appliances............. | 1.2 | 2.0 | 1.8 | 1.9 | 1.9 | 4.0 | 4.8 | 4.5 | 4.5 | 1.8 | 5.1 | 4.7 | 4.1 |
| Other. | S. $\%$ | 1.8 | 8.8 | 2.7 | 2. 5 | 8.8 | 8.8 | 2.8 | 8.0 | 3.4 | 8.9 | 9.5 | 3.8 |
| Clothing. | 8.7 | 6.3 | 6.5 | 7.1 | 7.8 | 8.3 | 7.4 | 8.0 | 8.2 | 8.4 | 8.8 | 9.4 | 9.5 |
| Transportation | 12.4 | 4.5 | 11.2 | 6.2 | 10.3 | 9.5 | 9.4 | 11.5 | 14.0 | 12.0 | 13.6 | 14.0 | 12.8 |
| Car. | 10.4 | 2.2 | 8.5 | 4.8 | 8.5 | 7.7 | 7.0 | 9.9 | 12.7 | 10.2 | 11.8 | 11.5 | 10.7 |
| Purchass. | 5.4 | 0.9 | 4.1 | 0.6 | 4.4 | 8.1 | 2.8 | 4.6 | 7.2 | 4.9 | 6.6 | 6.2 | 6.0 |
| Operation. | 5.0 | 1.9 | 4.4 | 4.8 | 4.1 | 4.6 | 5.6 | 6.8 | 5.5 | 6.8 | 6.8 | 6.3 | 4.8 |
| Other transportation |  | 2.3 | 2.7 5.4 | 1.4 | 1.8 | 1.8 | 1.5 | 1.6 | 1.3 | 1.8 | 1.8 | 2.4 | 2.1 |
| Medical care. | 3.9 | 5.3 | 5.4 | 4.3 | 5.4 | 5.2 | 4.8 | 4.4 | 3.8 | 4.0 | 4.0 | 3.3 | 3.6 |
| Personal care. | $\stackrel{3}{3.3}$ | 2.5 | 2.4 1.9 | 2.4 | 2.4 | 2.5 | 2.4 | 2.4 | 2.3 3.3 | 2.4 | 2.4 | 2.3 3.4 | 3.1 |
| Reading.... | 0.6 | 0.9 | 0.7 | $0 . f$ | 0.8 | 0.6 | 0.7 | 0.6 | 0.6 | 0.7 | 0.6 | 0.6 | 0.6 |
| Education. | 0.9 | 0.2 | 0.4 | 0.4 | 0.6 | 1.0 | 0.6 | 0.6 | 0.6 | 0.7 | 0.6 | 0.7 | 1.6 |
| Tobaceo and aleoholic beverages. | 4.0 | 3.6 | 4.2 | 8.2 | 4.2 | 4.1 | 4.6 | 4.4 | 4.5 | 4.3 | 4.1 | 3.8 | 3.4 |
| Other. | 1.3 | 1.0 | 2.0 | 1.5 | 1.8 | 1.9 | 1.0 | 1.5 | 1.4 | 1.1 | 1.3 | 1.2 | 1.1 |
| Totals, Current Consumption | 83.1 | 93.7 | 94.2 | 93.8 | 89.3 | 88.4 | 86.8 | 87.7 | 87.2 | 84.1 | 84.4 | 81.9 | 76.6 |
| Gifte and contributions. | 2.8 | 2.8 | 2.9 | 1.7 | 2.7 | 2.8 | 2.9 | 2.8 | 2.2 | 2.9 | 2.6 | 3.0 | 3.2 |
| Personal taxes.. | 9.2 | 1.2 | 1.3 | 1.9 | 4.2 | 4.3 | 5.9 | 6.0 | 6.2 | 8.1 | 8.4 | 10.2 | 14.5 |
| Security............... | 4.8 | 2.3 | 1.6 | 2.5 | 3.9 | 4.5 | 4.4 | 4.1 | 4.4 | 4.9 | 4.6 | 4.8 | 5.7 |
| Totals, Expenditure.... | 100.0 | 104.0 | $100 . *$ | 100.0 | 100.0 | 100.0 | 180.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

## Section 4.-Security Price Indexes

Security price indexes measure, through time, the effect of price change on the value of a portfolio of stocks bought and held by a hypothetical investor (as opposed to the more speculative trader). The portfolio represents stocks of Canadian companies listed on the Toronto, Montreal and Canadian stock exchanges. In the case of the mining and the two supplementary indexes (primary oils and gas, and uraniums), eligible issues are for producing mines and wells only. The number of shares held for each issue is in proportion to the total number of shares outstanding. Prices in the weekly common stock indexes (investors, mining and supplementary indexes) are Thursday's closing quotations. For the monthly preferred stock indexes, prices are monthly weighted averages of the daily closing prices in which weights are daily total sales. The indexes express current prices as a percentage of prices in 1956 . Monthly and certain weekly indexes appear in DBS monthly publication Prices and Price Indexes (Catalogue No. 62-002) and a weekly DBS report gives indexes on a weekly basis for all groups and sub-groups.

The investors index is comprised of three major groups, with relative importance indicated by percentage weights as follows: industrials, 67.5 ; utilities, 18.6; and finance, 13.9. Each major group is further divided into industry sub-groups corresponding to the standard industrial classification, adopted as the basis of classification in the revision of the index to the $1956=100$ base. The mining index is composed of two groups: base metals with a weight of 64.6 p.c. and golds with a weight of 35.4 p.c. The two supplementary indexes of common stocks-primary oils and gas, and uraniums-and the index of preferred stocks are not divided into component groups.

## 12.-Inder Numbers of Common Stock Supplementary Indexes and Prices of Mining Stocks, by Month, 1964 to Mid-1966

$(1956=100)$

13．－Investors Index Numbers of Common Stocks，by Month， 1964 to Mid－1966

|  |  |  <br>  <br>  |  <br>  | otoete றi囚NNDi －－ニーニース |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  <br>  $\qquad$ |  <br>  |  |
|  |  |  <br>  |  |  |
|  | 空 |  |  <br>  <br>  | $\begin{aligned} & \text { Hicosoc } \\ & \text { Givion } \end{aligned}$ |
|  | $\begin{gathered} \text { 䔍馬 } \\ \text { 可 } \end{gathered}$ | COMNNONmかNOO <br>  |  <br>  <br>  | $\begin{aligned} & \infty \infty \sim \text { no } \\ & \text {-oNigig } \end{aligned}$ |
|  |  | O－4000060NOMぃ <br>  <br>  |  <br>  |  |
|  |  | लのनलकサणのनालन上in <br>  |  N心灾家家家家 <br>  | $\begin{aligned} & \infty \infty \infty \infty \infty \\ & \text { पब } \end{aligned}$ |
|  |  | のザにOMOONNOt <br>  |  <br>  <br>  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  <br>  | OOmルNNOmゃO～0 <br>  |  |
|  |  |  <br>  <br>  |  <br>  <br>  |  |
|  |  |  <br>  |  <br>  | $\begin{aligned} & \text { அNon } \\ & \text { isisin in } \end{aligned}$ |
|  |  | ールNNーザ○Nののー <br>  ๓To |  <br>  <br>  | $\begin{aligned} & \text { novarm } \\ & \text { nixundo } \end{aligned}$ |
|  | 主苞曷 |  |  <br>  <br>  |  |
|  |  |  <br>  |  | $\begin{aligned} & \infty 0 \times 0 \infty \infty \\ & \infty \text { now } \\ & \text { ninn } \end{aligned}$ |
|  |  |  サைかo ニニニバッロッジッボッ |  <br>  <br>  |  |
|  |  |  <br>  －우ニ№nN． |  |  |
|  | 宫 $\cot$ <br>  |  <br>  <br>  | ササーツたのがサNのハッ <br>  <br>  |  |
|  | 으뭍 |  <br>  <br>  |  <br>  <br>  |  |
|  |  |  <br>  <br>  |  |  |
|  | $\qquad$ |  <br>  <br>  |  <br>  <br>  |  |
|  | $\begin{array}{r}\hline 0 \\ \hline 8 \\ \text { 品 } \\ \hline\end{array}$ |  <br>  Nㅓㅇ№nononono |  <br>  <br>  |  |
|  |  | $0 \infty 0$ 以NT一 क N NN <br>  <br>  |  |  |
|  |  |  |  |  |

14.-Index Numbers of Preferred Stocks, by Month, 1957-96

| $(1956=100)$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Yexs | Jan. | Feb. | Mar. | Apr. | May | June | July | Ang. | Eept. | Oet. | Nov. | Deo. | Yearly Av. |
| 1957. | 93.8 | 94.1 | 93.1 | 92.3 | 92.1 | 90.7 | 90.3 | 89.9 | 88.6 | 87.8 | 88.8 | 90.9 | 91.0 |
| 1958. | 92.7 | 94.1 | 94.8 | 95.4 | 97.2 | 98.6 | 97.7 | 98.3 | 98.8 | 97.9 | 97.9 | 96.1 | 96.8 |
| 1959. | 95.1 | 96.0 | 96.1 | 96.3 | 97.4 | 96.6 | 96.8 | 95.8 | 93.4 | 90.9 | 90.3 | 90.2 | 94.6 |
| 1960.. | 89.8 | 89.5 | 88.6 | 88.2 | 89.6 | 91.7 | 93.3 | 94.1 | 94.8 | 94.8 | 94.6 | 94.3 | 91.9 |
| 1961. | 85.0 | 95.2 | 94.9 | 96.0 | 97.1 | 97.7 | 98.4 | 98.3 | 99.5 | 100.7 | 100.6 | 99.9 | 97.8 |
| 1962 | 101.0 | 100.9 | 101.3 | 101.6 | 102.0 | 92.3 | 96.6 | 97.0 | 97.8 | 96.8 | 98.1 | 99.3 | 98.3 |
| 1963 | 102.0 | 101.5 | 101.2 | 101.9 | 103.9 | 103.5 | 102.2 | 101.6 | 101.6 | 102.4 | 102.6 | 103.7 | 102.3 |
| 1964 | 102.3 | 102. ${ }^{4}$ | 102.0 | 102.4 | 102.2 | 102.8 | 103.5 | 103.6 | 104.3 | 104.8 | 105.7 | 105.6 | 103.5 |
| 1965 | 109.3 | 106.8 | 105.2 | 104.0 | 103.7 | 103.5 | 102.8 | 101.3 | 100.9 | 100.6 | 100.0 | 98.1 | 102.8 |
| 1966 | 99.0 | 98.6 | 98.1 | 93.1 | 90.9 | 91.9 | 92.0 | 91.5 | 89.2 | 88.4 | 87.8 | 85.3 | 92.0 |

## CHAPTER XXII.--FOREIGN TRADE

CONSPECTUS

|  | Page |  | Page |
| :---: | :---: | :---: | :---: |
| Special Article: Canada's Participation in the Changing Pattern of World Trade, 1953-6' | 953 | Part II,-The Government and Forelgn Trade Section 1. Federal fozeign Trade Services. | 993 993 |
| Part I.-Forelgn Trade Statisti | 967 | Section 2. The Development of Tariffs | 1000 |
| Section 1. Explanatory Notes on Canadian Trade Btatistics... | 967 | Subsection 1. The Canadian Tariff Structure. | 1000 |
| Section 2. Total Foreign Thade. | 969 | Subsection 2. Tarifr and Trade Arrange- |  |
| Section 3. Trade by Geographic Area. | 970 | Sept. 15, 1966..... ..... | 1001 |
| Section 4. Trade by Commodity...... | 980 |  |  |
| Section 5. Trade by Section and Stage of Fabrication. | 987 | Part III.-Travel Between Canada and Other Countries. | 1010 |

Part II,-The Government and Forelgn Trade ..... 993Section 2. The Development of Tariffs1000Subsection 2. Tariff and Trade Arrange-menth with Other Countries as atSept. 15, 1966.....1001
Patt IIt.-Travel Between Canada and Other Countries ..... 1010

The interpretation of the symbols used in the tables throughout the Year Book will be found on p. viii of this volume.

The subject of foreign trade covers more than the treatment of exports and imports of commodities, important though this is. In its broader sense, foreign trade is made up of the total international interchange of goods, services, securities and other financial transactions, all of which are presented in their appropriate relationship in this Chapter and in Section 4 of Chapter XXIV Following the special article on Canada's Participation in the Changing Pattern of World Trade, Part I gives detailed statistics of that trade. Part II outlines the various ways in which the Federal Government promotes and encourages trade relationships, and contains a brief review of the Canadian tariff structure. Part III contains a review of the extent of travel between Canada and other countries in 1965, with estimates of the amount of money expended for that purpose.

## CANADA'S PARTICIPATION IN THE CHANGING PATTERN OF WORLD TRADE, 1953-66*

In the years since 1953 Canadian exports have grown one and a half times. Recently the pace has been faster, with an expansion of 60 p.c. in the past four years-as much as in the previous decade. Meanwhile, world trade has more than doubled since 1953 and its composition and direction have changed remarkably. But before looking into the changing character of the world market, it might be well to review the highlights of Canadian trade trends in this period.

## Canadian Exports

Following the post-Korean War decline, Canadian exports climbed sharply during the resource-development boom of 1954-56, but in the following four years sales inched up only slowly, while unused new capacity overhung the resource industries and investment stagnated. Only the exceptional sales of uravium and aircraft avoided absolute declines.

[^306]However, in the six years after 1960 exports expanded continually and by the beginning of the centennial year had doubled their annual rate. Twice in that period wheat injected an unexpected boost to foreign sales, alone increasing its value by two and a half times to over $\$ 1$ billion. The impact of the major sales to Communist China in 1961 was exceeded only by the effect of the tremendous contracts with Russia in 1963-64. The latter subsided somewhat in the following year but flared up again in 1965-66. Meanwhile, the large contracts with China were renewed on a long-term basis.

Forest and mineral products, the other traditional resource commodities which encompassed about three quarters of exports in 1960, experienced a slower, more gradual pick-up in sales. This strengthened in the mid-1960s, achieving an advance of more than one half by 1966 and bringing in its wake a new, larger and steadier development of resource potential. In this period uranium declined temporarily to small proportions, and oil, natural gas and iron ore gained new impetus. The major metals, in turn, enjoyed strong expansion and potash and sulphur approached the major status held by asbestos. Newsprint and lumber also exhibited new growth and the continuing rise in kraft pulp blossomed into a major development boom centred in the interior of British Columbia.

In the 1960s, however, the pace was set by end-products (non-food). In the previous decade sales, if anything, had fallen back from immediate postwar levels and had declined to only 8 p.c. of all exports but, in 1960-63 alone, end-product sales nearly doubled, with aircraft and related electronic apparatus leading a wide range of items. Recently, under the "Automotive Agreement" exchanges with American counterparts multiplied many times. This along with strong growth in items such as machinery again more than doubled endproduct exports, which early in 1967 comprised one quarter of all exports.

The direction of Canadian exports has not changed basically in the past dozen or so years. The United States continues to receive 55 p.c. to 60 p.c. of Canadian shipments. Overseas, however, there has been a slight and gradual diminution of the share to Britain

although other markets have grown in importance. The share sustained by "other Commonwealth and Preferential" countries indicates the continuing value of these relationships. It suggests that Britain's lesser market role is a reflection of slower growth in contrast to burgeoning demand in Continental Europe, Japan and the Communist countries.

## Canadian Imports

In the 1953-66 period, Canadian purchases of foreign goods more than doubled. During the resource-development boom of 1954-57, imports, particularly of machinery and equipment, moved up faster and higher than exports. The deficits on commodity trade, which topped $\$ 713,000,000$ in 1956, persisted until 1960 but after that, imports increased at a slightly slower pace than exports, with the notable exception of 1965 . Approaching a value of $\$ 10$ billion in 1966, Canada presents the sixth largest market in the world, ranking close to Japan. The greater part of this market is for machinery, transportation and electrical equipment, and producers materials such as fuels, metals, chemicals, foodstuffs, textiles and fibres. In addition, a wide range of consumer durables, apparel, foods, and other personal goods are received each year.

Throughout the postwar era, the United States supplied about 70 p.c. of these goods. Increased availability and competition from overseas sources reduced this proportion slightly in the early 1960 s but, as a result of the exceptional growth in North America in the past three years and the extra spur of the Automotive Agreement, the American share recovered to 72 p.c. in 1966. Imports from Britain levelled out after the "foreign" ear boom at the turn of the decade, but other Commonwealth suppliers benefited from the rise in sugar prices a couple of years ago. The remaining overseas countries retained their postwar high of 17 p.c. of the Canadian market which they reached in 1958 . Among them, Western Europe and Japan play a prominent role, as do Venezuela and the Middie East oil-producing countries.

## General Trend of World Trade*

World trade experienced almost unbroken and unprecedented growth in both value and volume in the past decade or so. It expanded even faster than physical output, illustrating that countries have been moving toward a higher level of economic interpenetration and specialization of production. The value of exports increased from $\$ 83$ billion in 1953 to $\$ 186$ billion in 1965 , a rise of 125 p.c. or 7 p.c. annually. In volume, the increase was similar since over-all prices were little different at the end of the period.

The expansion of trade, of course, was not at a uniform pace over the years nor in equal measure in all countries and for all commodities. International trade fell sharply during the cyclical slump of 1958 but, in response to the subsequent upswing of demand, recovered quickly to new heights. The rapid rate of expansion attained from 1955 to 1957 was reached again in 1960, followed by a moderate deceleration in 1961-62. Then in 1963-64 the growth of world commerce gained new speed to 10 p.c. annually, moderated to 7 p.c. in 1965 and quickened again in 1966.

## Comparative Trends in Market Regions

The expansion of trade in the past dozen years resulted mainly from stronger demand in the industrial countries; in particular, Japanese imports climbed by 11 p.c. a year and the European Economic Community (EEC) raised its purchases 10 p.c. annually. Trade in Eastern Europe also increased at an average of over 8 p.c. although, in view of its modest beginning and until recently its concentration within the Communist bloc, the effect on general world trade was limited. Imports of the developing countries, on the other hand, grew at a much slower rate, averaging about 4 p.c. a year, thus acting as a drag on the general growth of world imports. Nevertheless some of the industrial countries, notably Canada, the United States and Britain, performed at an only alightly faster rate.

[^307]

About half of the increase in world trade since 1953 occurred in Western Europe. The growth was largest and quickest in the EEC, which more than trebled import values, while purchases by North America nearly doubled and those by developing regions grew by three quarters. Consequently, the EEC's share of world imports rose from 18 p.c. to 25 p.c. Germany and Italy recorded the most rapid increases over the whole period, while the growth for France and the Low Countries has been especially strong since 1958-59.

Imports by FinEFTA (the European Free Trade Association and Finland), which more than doubled in value from 1953 through 1965, nearly maintained their share of the world's total, changing only from 17.9 p.c. in 1953 to 17.1 p.c. in 1965 . For both the EEC and EFTA a very appreciable increment stemmed from freer intra-group trade, which grew more rapidly than imports from outside countries. In the case of EFTA, however,
imports from within the group were, in 1965, still about one quarter of the total compared with above 40 p.c. in EEC. British imports, however, grew more slowly than the European or EFTA average, gaining barely a sixth from 1955 to 1962, while the upsurge that followed was stopped by the restrictions of October 1964 and later. On the other hand, Scandinavian trade kept up with the European average, showing particularly strong growth in intra-Scandinavian exchanges. Meanwhile, Austria, Switzerland and Portugal together more than tripled purchases and the remaining West European countries as a group kept the average pace.

Eastern Europe's imports rose more quickly than those of Western Europe in earlier years although the initial level in 1953 was relatively small. The prime force at that time was internal trade within the Communist bloc. Although over-all trade growth has since slowed there has been renewed commercial contact with outside countries, in contrast to the intensification of interaal exchange occurring in the west of the Continent. Eastern Europe's share of world purchases rose over the whole period from less than 10 p.c. to more than 11 p.c.

The United States remained the largest single import market by nearly doubling purchases in the dozen years after 1953. However, with faster growth elsewhere, their relative importance diminished appreciably from 13 p.c. to 11 p.c. of world imports. Similarly, Canada increased purchases about 85 p.e. but its share of the world market declined from 5.1 p.c. to 4.1 p.c.

Japan, of course, has had a spectacular, more than threefold rise in imports since 1953 and in 1965 provided 4.2 p.c. of the world market, having surpassed Canada in 1962. Moreover, Australia, New Zealand and South Africa were able to achieve healthier economic conditions and more satisfactory rates of growth than most other primary producers, particularly since 1962. Their total imports better than doubled in the 12 years to 1965 , restricting the diminution in their share of world imports from 3.8 p.c. to 3.5 p.c.

The Middle East oil-producers, with dramatic growth in export earnings, increased their purchases fourfold from a narrow original position and in 1966 bought 1.2 p.c. of the world's imports. Imports by the other less-developed countries of Africa, Asia and Latin America increased much less than the world average, despite their sharply increased need for imported supplies to speed the pace of economic development. Imports of this large group expanded by three quarters from 1953 to 1965 but, as a share of world imports, fell from 26 p.c. to 20 p.c. Following the boom up to 1957 , the rate of expansion of developing countries and their purchases abroad slackened and, as a consequence, imports by these countries have formed a steadily shrinking part of world imports.

Asia and Africa fared slightly better than Latin America in the past decade, even when the oil countries are excluded. Although the share of Asia and Africa in world imports declined to 15 p.c., their growth by half since 1956 compares favourably with the one-fifth addition to imports in Latin America which are now under 5 p.c. of the world market. Decolonization in the former regions brought some political problems but this general stagnation obviously reflects the lack of growth in export earnings and the acute shortage of development ftads.

## Commodity Trade Trends*

Over the past decade or so, manufactured goods, especially end-products, formed the most dynamic component of international trade. The reduction of tariffs had a much stronger impact on trade in finished goods which were more highly protected than industrial materials. Meanwhile, trade in agricultural products remained shackled by a maze of tariff and other barriers devised to protect local farmers. Moreover, actual world demand for finished goods increased more rapidly than other sectors because of greater elasticity in rela-

[^308]tion to incomes. At the same time, final demand for materials was restrained because of technological savings in the use of materials and the demand for higher quality in contrast to quantity. Furthermore, the trend of export prices was much more favourable for manufactured goods than for primary products.

For the whole period the volume of primary trade almost doubled and the volume of manufactures nearly tripled. The difference was accentuated by net price changes. While manufactures accumulated a one-tenth price gain, primary prices dropped one tenth between 1957 and 1962 but later recovered half the loss. As a result of these different rates of growth, the composition of international trade experienced quite substantial changes. In 1953 primary products constituted just over half and as late as 1958 about 46 p.c. of the total, but by 1965 their share was down below 40 p.c.

TRENDS OF WORLD TRADE BY COMMODITY GROUPS, 1953-65


The proportional decline of primary products in international trade was essentially the outcome of slow growth in food and agricultural materials, in which tropical products suffered a particularly sharp curtailment. Food and beverages, which made up 22 p.c. of all trade in 1953, were under 17 p.c. of the total in 1966. But some "higher income" items such as meat, fish, fruit and alcoholic beverages fared much better than "basic" items such as sugar, coffee, butter and tobacco. Cereals escaped a similar fate through the unforeseen and continuing shortfalls in the grain output of Communist countries.

A similar division existed among inedible crude materials, which also declined from about 18 p.c. of international exchanges in the period 1953-57 to about 13 p.c. in 1965. Oilseeds, hides and rubber showed limited increases while textile fibres, once a dominant sector, were especially sluggish. On the other hand, forest and mineral products held their own in the world market, primarily reflecting rapid growth in industrial activity in the advanced countries. The energy sector, which nearly maintained a one-tenth share of world trade, also saw a notable divergence between the slow demand for coal and the rapidly rising requirements for petroleum and its products.

In contrast, the share of manufactures in world trade rose continuously over the past dozen years. Already representing nearly half of world trade in 1953, the share advanced to over 60 p.c. by 1965. In recent years, three quarters of manufactured imports were absorbed by the industrial countries of North America, Western Europe and the Soviet area. A closer look at manufactures shows that some groups have expanded more rapidly than others, so that the internal composition has changed significantly in this period.

## Commodity Shares of Manufactured Exports from Industrial Countries, 1954 and 1984

(Percentages of total)

| Commodity | 1954 | 1964 |
| :---: | :---: | :---: |
|  | p.c. | p.c. |
| Fabricated Materials (tnedible). | 41.5 | 36.4 |
| Chemicals. | 11.8 | 12.3 |
| Tertiles. | 12.2 | 7.7 |
| Metals. | 17.5 | 16.0 |
| End-Products (Inedible). | 58.5 | 64.0 |
| Machinery and transportation equipment. | 39.4 | 44.3 |
| Other end-products....................... | 19.1 | 19.7 |
| All Manufaetures. | 100.0 | 100.0 |

The expansion in the shipments of machinery and transportation equipment stands out as the most dynamic element. In fact, its share of all exports rose from just over one sixth to nearly one quarter during the period. Exports of other (largely consumer) endproducts and of chemicals were additional strong components. Since the metal group almost kept the average pace of manufactures, it was textiles that dropped sharply relative to the total; along with other "basic necessities" such as food, demand elasticities for textiles in relation to rising incomes could not match those of other products.

## Trade Growth Comparisons

Trade among the industrial countries of relatively finished manufactured goods flourished in the past decade. Exports from Continental European countries advanced by 10 p.c. annually and Japan is now the source of seven times the value of goods shipped in 1953. Sales to industrial countries increased much faster than to developing areas. Often, countries with rapid growth, such as Italy and Japan, expanded their supply to the world faster than their intake and the same was true of France and other Common Market countries from 1956 to 1960 . Growth was particularly rapid in regional trade-within the EEC, within Scandinavia, and between Japan and its Far East neighbours. On the other
hand, in the United States and Britain, where there was moderate growth in trade in the past decade, imports rose slightly quicker than shipments to others. For Canada growth was also moderate but, if recent years are averaged, it was balanced between imports and exports. For Scandinavia and other EFTA countries, exports also kept pace with imports but in other Western European countries merchandise imports spurted ahead, reflecting primarily the impact of new tourist expenditures in Spain and Greece.

Although demand for crude materials showed a limited increase, Russia and Eastern Europe grew rapidly as a source, as the Iron Curtain slowly lowered. But tight restrictions on capital, service and other financial movements required a close balancing with bloc imports, with the exception of occasional gold sales. Notably, shipments to developing regions rose faster than imports while the reverse was true of advanced countries.


## Regional Trade Pattern Trends, 1955-64

(Average annual percentage increases in value)

| From- Tom | Canada | United States | EFTA | EEC | Japan | Soviet Bloc, China | Developing Countries | All |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | p.c. | p.e. | p.c. | p.c. | p.c. | p.c. | p.c. | p.e. |
| Canada. | $-$ | 5.3 | 4.4 | 9.3 | 16.8 | 103.6 | 7.9 | 6.5 |
| United States. | 5.0 | - | 7.6 | 10.6 | 15.7 | 106.2 | 6.1 | 6.5 |
| EFTA. | 4.6 | 8.4 | 8.7 | 9.2 | 27.0 | 11.5 | 2.7 | 6.5 |
| EEC. | 11.9 | 11.2 | 8.7 | 12.51 | 19.8 | 14.8 | 3.7 | 9.5 |
| Japan....................... | 17.6 | 17.9 | 19.5 | 16.6 | - | 39.9 | 11,4 | 14.5 |
| Soviet Bloc, Chins........ | 15.5 | 7.5 | 7.2 | 12.9 | 22.9 | 7.51 | ${ }_{8}^{18.2}$ | 9.0 |
| Developing countries....... | 7.8 | 1.4 | 2.9 | 5.6 | 12.4 | 14.7 | 2.41 | 4.3 |
| All Countries.. | 5.7 | 5.5 | 6.5 | 9.7 | 14.7 | 9.5 | 5.0 | 7.1 |

I Includes exports from one country to another within gromp.
Meanwhile, the MiddIe East oil-producing countries quadrupled their exports as well as their imports. Since purchases were less than one third of sales in 1953 , their trade surplus by 1964 climbed to $\$ 5.3$ billion on imports of $\$ 2.3$ billion; they supplied 4.2 p.c. of world trade but received 1.2 p.c. in return. On the other hand, except for the pick-up in 1963-64, exports of Australia, New Zealand and South Africa-mostly of wool and other farm products-grew very slowly; this tended to limit import growth, except in 1960 and in the recent development boom. The less-developed countries of Asia, Africa and Latin America had similar experiences of very slow growth in sales-under 60 p.e. for the whole period. This sluggishness was concentrated in tropical foods and agricultural materials and was reflected in declining prices and accentuated by the unstable political and social milieu. The effect was multiplied in that these countries increased sales less to each otber, even though neighbours, than to the advanced countries-the opposite of Western European experience.

In summary, the developing countries increased supply to the world even less than their small increase in demand. Most of the trade growth was among the advanced countries, with the fastest growing economies (including those recovering from World War II damage) showing even stronger gains as suppliers than as recipients.

## Canada's Share in World Commodity Markets

Canadian exports have moved from year to year in accordance with the general trend of world trade, although from 1959 to 1963 the one-fifth rise in Canadian exports was appreciably slower than the one-third increase in world exports. In 1964 and again in 1966 Canadian exports increased somewhat faster than the world total, which was in part the effect of exceptional demand in Russia and China for Canadian wheat. The relatively moderate expansion of Canadian exports at the beginning of the decade may be attributed in part to the existing high level of postwar sales in contrast to the war-damaged economies as well as to the concentration of direction and to the commodity composition.

Canadian exports are adjusting rapidly to changes in demand although they still exhibit substantial variations from the unfolding pattern of world imports. In 1965 inedible endproducts accounted for one sixth of Canadian exports compared with 9 p.e. in 1960; in 1966 this share rose sharply to reach one quarter of all exports as 1967 began. This is a remarkable share increase, particularly in view of the rising total of Canadian exports. If one considers, moreover, that the share of products in world trade increased from about 29 p.e. to 33 p.c. in this period, it becomes evident that the make-up of Canadian exports is shifting heavily to the commodity groups that have shown most growth in the past dozen years. This picture is amplified somewhat by a glimpse at the trends in major sectors within the commodity groups.


Agricultural products and crude materials are still important in Canadian exports, forming nearly half of all shipments in 1965. Generally these primary products form only 30 p.c. of world imports, having declined continually from earlier pre-eminence. But if over-all trade in food has moved slowly, this cannot be said of meat, fish and alcoholic beverages nor of cereals. All of these loom large in foreign purchases from Canada in contrast to slow-moving items such as sugar and tropical beverages. Moreover, if there is a genuine freeing of trade in food, Canada might fare even better.

Canada's specialization in mineral and forest products as distinct from textile fibres, oilseeds, rubber and similar tropical or pastoral products again modifies the impact of sluggish markets for crude materials. The former are in fairly strong demand, being oriented to the buoyant industrial markets for durables, construction and packaging. Within the less buoyant group, it is apparent that man-made fibres and rubber have accentuated the stagnation of natural products and this also has favoured Canada to a certain degree. In the energy sector, the further discovery of oil and gas in Western Canada and the wider use of these materials throughout North America have improved Canada's fuel position quite notably.

Conversely, in the further-manufactured groups, Canada's exports have been conditioned until recently not only by specialization in a few resource-related sectors but also by the general organization of end-products and semi-fabrication industries inside the protected domestic market.

On the one hand, Canada is famous for newsprint and non-ferrous metals and world demand for these commodities has increased at a moderate pace. But world trade in semifabricated metals, paperboard; fine papers and chemicals has grown faster. Even more so have exchanges in machinery and equipment, where Canada's participation until recently
was limited largely to farm machinery and certain electrical items. The improved performance in the past few years is in part attributed to special defence and aid programs but also to a wider realization of the possibilities in rationalizing secondary industries in relation to the international market. This has been particularly evident in the upsurge in exchanges of automobiles and components.

## Canada's Participation in Major Foreign Markets

There is a wide appreciation of the particular part played by the United States and also by Britain and other countries in Canada's inflow and outflow of merchandise. However, less attention has been given to the role of Canada in the trade patterns of foreign countries.

It is not surprising that the Canadian impact is highest in the imports of the United States, its immediate neighbour. Canada's share of American purchases has been just under 23 p.c. in recent years, about the same as in the mid-1950s and nearly triple the 8-p.c. portion of the British market, usually the next highest Canadian impact. In both, a decline in share in the late 1950s was arrested--in 1957 in Britain and since stabilized; in 1960 in the United States followed by recovery. Canada is by far the largest single supplier to the United States, equalling the whole of Latin America and nearly rivalling all of Western Europe. In Britain, Canada is one of several main suppliers-trailing the United States but larger than any other single country. Yet EEC as a group is twice as large and Scandinavia and the other "Old Dominions" are larger. In both markets Continental Europe is increasing its share while developing nations are falling off the pace; meanwhile, Canada has maintained its share.

Over much of the period the 4-p.c. to 5-p.c. share of Japanese imports ranked third in the scale of impact-until Chinese wheat purchases changed the picture. Canadian sales did not keep up with general Japanese imports in the mid-1950s but by 1960 much of the ground had been regained and the position slowly improved up to 1964 . Some of the decline in 1965 has since been recovered.

Australia, New Zealand and South Africa collectively rank next, with Canadian participation in imports reaching 3.6 p.c. These fellow "Dominions" in the "old" Commonwealth of the 1930 were traditional but never large proportional buyers from Canada, because of the parallel histories of industrial development. Sales fluctuated markedly, reflecting financial and industrial adjustments, but Canada's share in the period was not higher than in 1965.

It is perhaps surprising that Canada's impact in Latin American imports lexcluding sterling (£) territories], at about 3 p.c. of total, is so close to that in the "Old Dominions" and nearly double the share obtained in developing $£$ countries. After a decline in the mid1950s, Canadian participation in Latin America gained, particularly in recent years. Meanwhile, in the developing $£$ area, imports from Canada were under 2 p.c. of the total in this period and would probably have been much less without aid through the Colombo Plan and other Commonwealth channels. Nevertheless, there are wide variations in Canada's penetration throughout the Commonwealth. In particular, trade with the nearby West Indies has traditionally been important, although in recent years Canada's share has eased down below one tenth of their imports.

Continental Western Europe, however, is even farther down the scale of Canadian participation. Canadian exports to these markets are, of course, sizable and increasing but in relation to total volume they appear small-a little over 1 p.c. of Scandinavian imports and in the Common Market declining from about 2 p.c. to just over 1 p.c. The relaxation of barriers against end-producta and the tremendous rise of intra-European exchanges has tended to overshadow imports of grain and industrial materials from Canada.

The dramatic rise of Canadian wheat purchases by Communist countries has radically altered the Canadian position in these markets. Current Chinese trade data are hard to obtain but it appears that Canada recently held up to one tenth of the restricted import market of this large but autarchic economy. The impact on Eastern Europe has been less striking because of their considerable exchanges within the region and their widening commercial contacts throughout the world. Nevertheless, in $196 \pm$ Canada supplied 2.4 p.c. of all Eastern Europe's imports, a many-fold rise from earlier shares. Moreover, considering Russia (U.S.S.R.) alone, the Canadian share has been even higher-surpassing 4 p.c. in 1964. This fell along with wheat sales in 1965 but climbed again in 1966.


It will be noted that Canada does not have the preponderance in the supply of any country (or in their sales) that the United States and even Britain have as markets for and suppliers to Canada. This structural contrast makes Canada far more sensitive to their developing situations than they are to Canadian activities.

Furthermore, although Canada has held its own share in most markets of the world, the higher penetration of the American and British markets (which take nearly three quarters of Canadian exports) at a time when these economies were expanding less rapidly than Continental Europe and Japan tended to dampen Canada's over-all performance in the world market. By the same token, stronger growth trends in the United States in the past few years have created many of the opportunities for the recent rising trend in Canadian exports.

Summary Statistics of World Markets, 1953-f5

| Regional Market and Commodity Group | Valne of Imports ( $\$ \mathbf{\prime} 000,000,000$ U.S.) |  |  |  | PercentageChange |  |  | Percentage Share of World Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1953 | 1956 | 1960 | 1965 | 1953-56 | 1956-60 | 1960-65 | 1953 | 1965 |
| Regional Market |  |  |  |  |  |  |  |  |  |
| Cansda. | 4.3 | 5.6 | 5.7 | 8.6 | 31 | - | 42 | 5.1 | 4.1 |
| United States., | 10.9 | 12.8 | 15.1 | 21.4 | 17 | 18 | 42 | 12.9 | 10.9 |
| EEC. | 15.5 | 23.0 | 29.6 | 49.0 | 48 | 29 | 65 | 18.4 | 25.1 |
| France. | 4.2 | 5.9 | 6.3 | 10.3 | 40 | 7 | 65 | 5.0 | 5.3 |
| Germany | 4.1 | 7.0 | 10.1 | 17.5 | 70 | 45 | 73 | 4.9 | 8.9 |
| Benelur. | 4.8 | 7.0 | 8.5 | 13.8 | 48 | 21 | 63 | 5.7 | 7.1 |
| Italy. | 2.4 | 3.2 | 4.7 | 7.4 | 3 L | 49 | 56 | 2.9 | 3.8 |
| FinEFtA. | 15.1 | 19.2 | 23.8 | 33.4 | 27 | 24 | 41 | 17.9 | 17.1 |
| Britain... | 9.0 | 10.4 | 12.3 | 15.7 | 15 | 18 | ${ }_{53}^{27}$ | 10.7 | 8.0 |
| Scandinavia | 4.0 | 5.6 | 7.2 | 11.1 | 40 | 29 | 53 | 4.8 | 5.7 |
| Other Western Europe. | 2.0 | 2.2 | 2.6 | 5.9 | 12 | 17 | 127 | 2.4 | 3.0 |
| Eastern Europe. | 8.2 | 10.7 | 16.8 | 21.6 | 30 | 58 | 28 | 9.7 | 11.1 |
| Russis. | . | 3.8 | 5.6 | 8.1 | - | 56 | 43 | $\cdots$ | 4.1 |
| Middle East Oil Area. | 0.6 | 1.0 | 1.7 | 2.3 | 80 | 62 | 38 | 0.7 | 1.2 |
| Japan. | 2.4 | 3.2 | 4.5 | 8.2 | 34 | 39 | 82 | 2.9 | 4.2 |
| Australia, New Zealand and South Africa. | 3.2 | 4.1 | 5.0 | 6.9 | 27 | 24 | 36 | 3.8 | 3.5 |
| Developing $\mathcal{E}$ Area, | 6.5 | 8.4 | 10.4 | 13.2 | 29 | 24 | 27 | 7.8 | 6.8 |
| Other Aria, Africa. | 9.0 | 10.4 | 11.5 | 15.9 | 15 | 11 | 37 | 10.7 | 8.1 |
| Lstio America, | 6.5 | 7.8 | 8.4 | 9.7 | 22 | 5 | 16 | 7.7 | 4.9 |
| All Imports......... $\left\{\begin{array}{l}\text { cidit........... } \\ \text { f.0.b........ }\end{array}\right.$ | $\begin{aligned} & 84.3 \\ & 74.5 \end{aligned}$ | $\begin{aligned} & 108.6 \\ & 102.8 \end{aligned}$ | $\begin{aligned} & 135.0 \\ & 127.4 \end{aligned}$ | $\begin{aligned} & 195.3 \\ & 186.3 \end{aligned}$ | $\begin{aligned} & 28 \\ & 28 \end{aligned}$ | $\begin{aligned} & 24 \\ & 24 \end{aligned}$ | $\begin{aligned} & 45 \\ & 46 \end{aligned}$ | 100.0 | 100.4 |
| Commodlty Group |  |  |  |  |  |  |  |  |  |
| Food and beverages....................... | 18.6 | 19.6 | 22.3 | 30.8 | 18 | 14 | 38 | 22.3 | 16.5 |
| Materiale. | 40.4 | 57.8 | 68.4 | 94.0 | 43 | 19 | 37 | 54.2 | 50.5 |
| Crude materials. | 13.3 | 18.5 | 21.3 | 24.5 | 39 | 15 | 15 | 17.9 | 13.2 |
| Energy materials | 7.6 | 11.5 | 12.7 | 18.0 | 52 | 10 | 42 | 10.2 | 9.7 |
| Fabricated materials. | 19.5 | 27.7 | 34.5 | 51.5 | 42 | 24 | 49 | 26.2 | 27.6 |
| End-products............................... | 17.5 | 25.4 | 36.7 | 61.5 | 45 | 44 | 68 | 23.5 | 33.0 |

## Summary Statisties of World Exports, 1953-65

| Major Sources | Valve of Exports$(\$ \mathbf{}=00,000,000$ U.S. $)$ |  |  |  | Percentage Change |  |  | Percentage Share of World Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1958 | 1958 | 1960 | 1965 | 1953-56 | 1956-60 | 1060-65 | 1953 | 1965 |
| Canada. | 4.2 | 4.9 | 5.6 | 8.1 | 16 | 13 | 45 | 5.1 | 4.3 |
| United States.. | 15.7 | 19.0 | 20.4 | 27.1 | 21 | 8 | 33 | 19.0 | 14.5 |
| EEC.. | 14.7 | 20.7 | 29.7 | 47.9 | 41 | 44 | 81 | 17.8 | 25.7 |
| France. | 4.0 | 4.8 | 6.9 | 10.1 | 18 | 44 | 47 | 4.9 | 5.4 |
| Germany | 4.7 | 7.8 | 11.4 | 17.9 | 64 | 47 | 57 | 5.7 | 9.6 |
| Benelux.......................................... | 4.4 1.5 | 6.0 2.1 | 7.8 3.6 | 12.8 7.2 | 37 42 | 30 70 | 67 | 5.3 1.8 | 8.9 8.9 |
| FinEFTA. | 12.6 | 16.0 | 19.2 | 27.5 | 27 | 20 | 43 | 15.2 | 14.8 |
| Britain................................... | 7.2 | 8.8 | 10.0 | 13.2 | 23 | 13 | 13 | 8.7 | 7.1 |
| Scandinavia. | 3.5 | 4.6 | 5.9 | 9.2 | 33 | 29 | 55 | 4.2 | 4.9 |
| Other Weatern Europe. | 1.4 | 1.3 | 1.7 | 2.5 | -5 | 34 | 44 | 1.7 | 1.3 |
| Eastern Europe. | 8.1 | 10.5 | 15.6 | 21.1 | 29 | 49 | 35 | 9.8 | 11.3 |
| Rnssia. |  | 3.8 | 5.6 | 8.2 | .. | 54 | 47 |  | 4.4 |
| Middle East Oil Area....................... | 1.9 | 3.2 | 4.6 | 7.8 | 66 | 43 | 88 | 2.4 | 4.2 |
| Japan........................................ | 1.3 | 2.5 | 4.1 | 8.5 | 96 | 62 | 109 | 1.5 | 4.5 |
| Australia, New Zealand and South Africs... | 3.4 | 3.7 | 3.9 | 5.4 | 10 | 6 | 38 | 4.1 | 2.9 |
| Developing £ Area. . . . . . . . . . . . . . . . . . . . . | 6.2 | 7.0 | 7.6 | 3.6 | 14 | 8 | 26 | 7.5 | 5.2 |
| Other Asia, Alrica. | 5.7 | 6.4 | 6.7 | 9.8 | 13 | 6 | 48 | 6.8 | 5.3 |
| Latin America, | 7.6 | 8.6 | 8.6 | 11.2 | 13 | -1 | 30 | 9.2 | 6.0 |
| Frorld Supply ......................... | 82.4 | 103.8 | 127.7 | 186.3 | 26 | 23 | 4 | 104.0 | 100.0 |

## Summary Statistics of Canada's Exports, 1953-65

| Country or Area | Value of Exports ( $\mathbf{F}^{\prime} 000,000$ U.S.) |  |  |  | PercentageChange |  |  | Percentage Share of Each Market |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1953 | 1956 | 1980 | 1985 | 1953-56 | 1050-60 | 1960-65 | 1953 | 1965 |
| United States. | 2,461 | 2,912 | 3,141 | 4,670 | 18 | 8 | 48 | 22.6 | 22.6 |
| EEC. | 265 | 354 | 456 | 588 | 34 | 29 | 28 | 1.9 | 1.2 |
| Britain.................................... | 675 |  | 953 | 1,096 | 23 | 14 | 15 | 9.1 | 8.0 |
| Scandinavia........... ................... | 50 | 72 | 105 | 117 | 44 | 48 |  | 1.1 | 1.2 |
| Eastern Europe. | 10 | 64 | 40 | 290 | 540 | -37 | 616 | 0.3 | 1.3 |
| Communist China. . . . . . . . . . . . . . . . . . . | $\overline{1}$ | 3 | ${ }^{9}$ | 97 | 7 | 268 | 981 | $5 \cdot$ | 6.5 |
| Japan., .............................. | ${ }_{69}^{121}$ | 130 | 184 | 2293 | 7 34 | 42 37 | 59 31 | 5.3 3.0 | 4.8 3.6 |
| Australia, New Zealand and South Africa. | 99 | 133 | 182 | 238 | 34 | 37 | 31 | 3.0 | 3.6 |
| Developing $£$ Area...................... | 139 | 116 | 180 | 223 | -17 | 88 | 40 | I, 9 | 1.7 |
| Latin America............................. | 201 | 180 | 179 | 298 | -10 | -1 | $6 \hat{6}$ | 2.6 | 3.1 |
| Werld Market.......................... | 4,184 | 4,847 | 5,562 | 8,107 | 18 | 13 | 45 | 6.1 | 4.3 |

## PART I.-FOREIGN TRADE STATISTICS*

## Section 1.-Explanatory Notes on Canadian Trade Statistics

Sources.-Canadian foreign trade statistics are compiled from information recorded on customs documents received by the Dominion Bureau of Statistics from the various customs ports in Canada with the following exceptions: electricity exports are based on reports received from the National Energy Board and imports are based on reports received from public utility companies; and crude petroleum exported by pipeline, statistics for which are reported directly to the Bureau by the pipeline companies. Record is kept of value and, whenever possible, of quantity. In considering trade figures, it should be noted that the statistics do not necessarily reflect the financial transactions relating to the movement of goods since the method and time of payment are affected by many factors.

Coverage.-Domestic exports or exports of Canadian produce include exports of goods wholly produced in Canada together with exports of previously imported goods that have been changed in form by further processing in Canada. Re-exports or exports of foreign produce include previously imported goods that are exported from Canada in the same form as when imported. From January 1964, re-exports have also included exports from customs warehouses.

Imports, as from Jan. 1, 1964, include all goods cleared by customs immediately on arrival in Canada, plus goods entered into customs warehouses rather than cleared on arrival. For 1963 and earlier years, imports included goods cleared immediately on arrival plus goods cleared for consumption out of customs warehouses. The two types of record eventually cover the same totals, except for a small amount of goods entered into customs warehouses and then re-exported, but there may be an important difference in the time at which warehoused goods are recorded as imports; some shipments entering customs warehouses remain there for several months before clearance.

The most important exclusions from export totals are: current coin, gold, goods shipped to Canadian Armed Forces or diplomats stationed abroad, goods financed under the Defence Appropriation Act and shipped to other NATO countries, temporary exports for exhibition or competition, fuel and stores sold to foreign vessels and aircraft in Canada, settlers' effects, private donations and gifts, and identifiable tourist purchases-generally, all temporary exports and goods merely moving in transit through Canadian territory.

The most important exclusions from import totals are: current coin, gold, goods for use of the United States Armed Forces stationed at treaty bases in Canada, Canadianowned military equipment returned to Canada, ships imported for use in foreign trade and ships of British construction and registry imported for use in the coasting trade, temporary imports for exhibition or competition, fuel and stores purchased by Canadian vessels and aircraft abroad, settlers' private donations and gifts, tourist purchases exempt from duty, and goods imported for foreign armed forces or diplomats stationed in Canada-generally, all temporary imports and goods merely moving in transit through Canadian territory.

Beginning Jan. 1, 1964, Canada's trade statistics are compiled on a "General Trade" basis instead of on the "Special Trade"' basis used previously. The main difference for figures recorded on the General Trade basis is that imports are entered as such whether the goods are cleared through customs for immediate domestic use or stored in a customs warehouse. Domestic exports remain the same on both bases but re-exports, after Jan. 1, 1964, include exports from customs warehouses which were previously excluded. Over a period of years, the totals of Canadian exports or imports would be almost the same on either basis but considerable differences might appear in individual years because of time of clearance and extent of business activity.

[^309]From Jan. 1, 1960, a new category was eatablished in both export and import statiatics entitled "Special Transactions-Non-trade" This category includes certain commodity movements which either have no international financial implications or, for various reasons, are better considered separately from merchandise trade in economic analysis. The value of transactions of these types is now excluded entirely from published totals of Canadian merchandise trade and does not appear in this volume, but statistics for the classes of this category are contained in the regular monthly export and import reports.

Beginning with statistics for January 1961, a new export commodity classification was used, based on the Standard Commodity Classification developed by the DBS as a tool for integrating statistical series derived from different sources. Whereas the classification previously used classified commodities primarily according to the material of which they were chiefly composed, the new classification places commodities in sections mainly according to stage of processing and purpose, as follows: Live Animals; Food, Feed, Beveragee and Tobacco; Crude Materials, Inedible; Fabricated Materials, Inedible; End Products, Inedible; and Special Transactions-Trade.

As from Jan. 1, 1964, a new commodity classification was also introduced for import statistics, based on similar concepts to those embodied in the export classification, so that there is now a closer approach to comparability between the two sets of statistics. As part of the change to the new classifications, the commodity detail shown in trade returns has been modernized by eliminating statistics on some commodities of minor significance and instituting new classes for many commodities of greater importance. The grouping system employed in the new classification also makes easier the identification of other commodities which may merit separate specification. For most of the commodities of greatest importance in Canadian exports, the classes of the new export commodity classification are substantially identical with those of its predecessor. The import classification is more extensive than the export classification and in its new form gives an up-to-date and comprehensive coverage of those commodities which constitute the bulk of Canada's import trade.

Valuation.- Export entries define the value of exports as the "actual amount received or to be received in terms of Canadian dollars, exclusive of all charges" (freight, insurance, handling, etc.). This definition would give values f.o.b. point of consignment for export but in practice it is not always followed. For example, in recent years a significant but indeterminate proportion of exports has been reported in United States dollars, resulting in some overstatement of the value of exports for the period prior to June 1961 and some understatement of their value in subsequent years.

The value of goods imported is usually the value as determined for customs duty. The Canadian Customs Act generally requires the valuation of goods f.o.b. point of shipment in the country of export but, at least in recent years, importers have often reported c.i.f. value for free goods or goods subject to specific rates of duty. An effort is made to ensure that f.o.b. values are consistently used in import statistics in the following cases: goods subject to dumping duty (from January 1959); raw cotton and crude petroleum (from January 1962, retroactive to January 1960); raw sugar (from January 1963, retroactive to January 196I); and all shipments individually valued at $\$ 100,000$ or more (from January 1964). Only about one fifth of the value of imports is covered by these specific cheeks.

Country Classification.-Trade is credited to countries on the basis of consignment. For exports from Canada, the country of consignment is that country to which goods are, at the time of export, intended to pass without interruption of transit except in the course of transfer from one means of conveyance to another. For imports into Canada, the country of consignment is the country from which the goods came without interruption of transit except in the course of transfer from one means of conveyance to another. This is not necessarily the country of actual origin, since goods produced in one country may be imported by a firm in another country and re-sold to Canada; in such cases the second country is the country of consignment to which the goods are credited. There is one
exception to this rule; an attempt is made to classify by country of origin goods produced in South America, Central America, Bermuda and the Antilles and consigned to Canada from the United States. The effect of this procedure is to reduce slightly the imports credited to the United States and to increase those credited to South and Central American countries.

The country sub-totals include trade with Commonwealth and other countries entitled to Preferential rates of duty (the Republic of Ireland and the Republic of South Africa).

Discrepancies in Trade Statistics Between Canada and Other Countries.Canada's statistics of exports are rarely in exact agreement with the import statistics of its customers and parallel differences occur with Canadian imports. Major factors contributing to these discrepancies include:-
(1) Differences in the system of valuation used by Canada and those of other countries, especially with respect to the treatment of transportation charges.
(2) Differences in the statistical treatment of special categories of trade, such as armaments and military supplies, government-financed gift or mutual aid shipments, postal and express shipments, or warehouse trade.
(3) Differing definitions of territorial areas.
(4) Differing systems of crediting trade by countries, notably the consignment system used by Canada and the actual origin or ultimate destination system in use by some other countries.
(5) Differences in the time at which trade is recorded in the statistics of partner countries caused by the time required for goods to move from one country to another.

## Section 2.-Total Foreign Trade

In considering the figures in Sections 2 to 5 , reference should be made to the explanatory notes on trade in Section 1. Exports and imports of gold are excluded from all tables.

## 1.- Value of Total Foreign Trade of Canada (excluding Gold), 1851-65

Norb.--Figures have been revised to cover the adjustment for "Special Transactions-Non-trade"; see p. 968.

| Year | Exports |  |  | Importe |  |  | Balance of Trade: Excess of Exporta (+) Imports ( - ) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Domestic | Re-exports | Total | Dutiable | Free | Total |  |
|  | \% 000 | \% 000 | \$000 | * 000 | \% 000 | \$000 | \$'000 |
| 1951 | 3,897,082 | 48.847 | 3,945,924 | 2,174,304 | 1,830,635 | 4,004,989 | - 59,01t |
| 1952 | 4,282,361 | 54.814 | 4,337,175 | 2,162,882 | 1,753,535 | 3,916,418 | + 420,757 |
| 1953. | 4,097,111 | 55, 358 | 4,152,268 | 2,417,960 | 1,829, 848 | 4,247.808 | - 95.589 |
| 1954. | 3,860,217 | 65,604 | 3,925.821 | 2,311,568 | 1,655,833 | 3,967, 401 | - 41,580 |
| 1955. | 4,258,328 | 69,448 | 4,327,776 | 2,638,037 | 1,929,718 | 4,567,754 | - 239,978 |
| 1956. | 4,760, 442 | 73,335 | 4,883,777 | 3,292,516 | 2,254,435 | 5,546,951 | - 713,175 |
| 1957 | 4,788,880 | 95, 261 | 4,884,341 | 3,223,197 | 2,250,149 | 5,473,346 | - 589,205 |
| 1958. | 4.791,436 | 102,007 | 4,894,343 | 2,852,707 | 2,097,785 | 5,050,492 | - 156,150 |
| 1959. | 5,021,672 | 118,628 | $5.140,300$ | 3,143,065 | 2,365,858 | 5,508,921 | - 388,621 |
| 1960. | 5,255,575 | 131.217 | 5,386,792 | 3,048,583 | 2,434,112 | 5,482,695 | - 95,903 |
| 1961. | 5.754,986 | 149,229 | 5,895,215 | 3,115,408 | 2,653,170 | 5,768,578 | + 126,637 |
| 1962. | 6.178,523 | 169,190 | 6,347,713 | 3,480, 282 | 2,777,494 | 8,257,776 | + 89,937 |
| 1963. | 6,798,529 | 181,613 | 6,980,142 | 3,542,585 | 3,015,623 | 6,558,209 | + 421,933 |
| $1964{ }^{\prime}$ | 8,094,219 | 200, 186 | 8.303,405 | 4,034.903 | 3,452,804 | 7,487,707 | + 815,698 |
| 1865. | 8,525,078 | 241,599 | 8,766,677 | 4,366,096 | 4,267,334 | 8,833,430 | + 133,247 |

Treatment of Gold in Trade Statistics.-The general use of gold as a money metal gives it peculiar attributes that distinguish it from other commodities in trade. In particular, international movements of gold are determined largely by monetary factors rather than by ordinary trade or commercial considerations. Gold is generally acceptable; it does not have to surmount tariff barriers and is normally assured a market at a fixed
minimum price. Also, gold may be bought or sold internationally without any phyaical movements of the metal, such transactions being recognized by simply setting aside or 'ear-marking' the metal in the vaults of some central bank.

For these reasons, movements of gold in a primary or semi-fabricated state are excluded from the totals of Canada's commodity trade. However, since gold is produced in Canada primarily as an export commodity, a series showing new gold production available for export is published as a supplement to the trade statistics. Because this series is calculated on a production basis, a division of the figures into transactions with individual countries is not possible.

## 2.-New Gold Production Available for Export, by Month, 1958-65

(Millions of dollars)

| Montb | 1958 | 1959 | 1960 | 1961 | 1962 | 1963 | 1984 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Jantary. | 14.7 | 11.7 | 14.5 | 14.1 | 8.4 | 13.1 | 12.8 | 14.8 |
| February | 17.7 | 18.1 | 15.0 | 14.2 | 18.1 | 13.1 | 10.9 | 7.7 |
| March. | 11.1 | 0.8 | 14.3 | 12.8 | 14.5 | 14.8 | 8.6 | 12.2 |
| April. . | 10.7 | 14.1 | 9.4 | 13.3 | 9.2 | 11.5 | 15.4 | 8.5 |
| May. | 12.9 | 12.9 | 12.4 | 15.2 | 17.6 | 12,4 | 10.6 | 13.9 |
| June. | 14.7 | 13.8 | 13.3 | 13.9 | 12.8 | 13.9 | 14.7 | 11.9 |
| July. | 13.6 | 11.4 | 11.7 | 12.7 | 10.5 | 12.3 | 8.9 | 10.4 |
| August. | 11.4 | 11.1 | 14.4 | 14.8 | 16.2 | 11.5 | 14.0 | 12.1 |
| September | 12.6 | 10.3 | 15.7 | 13.1 | 11.6 | 12.3 | 12.6 | 11.9 |
| October. | 13.9 | 9.4 | 12.3 | 11.1 | 12.6 | 15.0 | 10.5 | 9.8 |
| November | 11.4 | 12.6 | 11.7 | 16.3 | 14.1 | 12.6 | 10.5 | 12.0 |
| Deceraber | 12.4 | 15.1 | 16.8 | 10.7 | 9.6 | 11.4 | 14.3 | 12.5 |
| Totals | $15 \% .1$ | 148.3 | 161.5 | $10 \% .2$ | 155.2 | 153.7 | 141.8 | 137.7 |

## Section 3.-Trade by Geographic Area

The tables in this Section provide information about Canada's total foreign trade by geographic region and by country.

## 3.-Trade of Canada with Commonwealth and Preferential Countries, and Other Countries, 1946-65

| Item and Year | Britain |  | Other Commonwealth and Prefer* ential Countries |  | United States ${ }^{1}$ |  | Other Countries |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Value | $\begin{gathered} \text { P.C. } \\ \text { of } \\ \text { Total } \end{gathered}$ | Value | $\begin{gathered} \text { P.C. } \\ \text { oi } \\ \text { Total } \end{gathered}$ | Value | $\begin{aligned} & \text { P.C. } \\ & \text { of } \\ & \text { Total } \end{aligned}$ | Value | $\begin{gathered} \text { P.C. } \\ \text { of } \\ \text { Total } \end{gathered}$ |
| Domestic Exports | \$ 000 |  | \$'000 |  | \$'000 |  | \$ 000 |  |
| 1946. | 594,138 | 28.1 | 301,411 | 13.3 | 884,066 | 38.9 | 492,390 | 21.7 |
| 1947. | 746,718 | 27.1 | 405,485 | 14.8 | 1,030, 101 | 37.4 | 570,495 | 20.7 |
| 1948. | 688,249 | 22.4 | 337,880 | 11.1 | 1,498,552 | 49.1 | 533, 409 | 17.4 |
| 1949. | 702,074 | 23.6 | 309.214 | 10.4 | 1,504,768 | 50.6 | 458,913 | 15.4 |
| 1950. | 467, 896 | 15.1 | 197,654 | 6.4 | $2,020,703$ | 65.1 58.9 | 417,763 | 18.4 |
| 1951. | 683, 124 | 16.2 | ${ }_{283}^{260,889}$ | 6.7 | $2,296.235$ $2,302,873$ | 58.9 88.8 | 709,834 851,418 | 18.2 22.2 |
| 1952. | ${ }_{662} 744.481$ | 17.4 16.2 | 283,809 244,745 | 6.6 6.0 | $2,302,873$ $2.413,318$ | 63.8 58.9 | 776, 263 | 22.2 18.9 |
| 1954. | 651,083 | 16.9 | 202,561 | 5.2 | 2,308,670 | 59.8 | 697,953 | 18.1 |
| 1955. | 767,642 | 18.0 | 248,624 | 5.9 | 2,547,636 | 58.8 | 694,428 | 16.3 |
| 1958. | 811,113 | 17.0 | 252,117 | 5.3 | 2,803,085 | 58.9 | 894,127 | 18.8 |
| 1957. | 720,898 | 15.1 | 240.016 | 5.0 | 2,846,846 | 59.4 | 981,320 | 20.5 |
| 1958. | 771,576 | 16.1 | 290,125 | 6.1 | 2,808,067 | 58.6 | 921,667 | 19.2 |
| 1959. | 785, 802 | 15.7 | 281.462 | 5.6 | 3, 083, 151 | 61.4 | 871,257 1 |  |
| 1960. | 915,290 | 17.4 | 333,815 | 6.4 | $2,932,171$ $3,107,176$ | 55.8 84.0 | 1,074,300 | 20.4 |
| 1961. | 909,344 | 15.8 14.7 | 328,854 | 5.7 5.4 | $3,107,176$ $3,608,489$ | 64.0 38.4 | $1,409,612$ $1.330,040$ | 24.5 |
| 1963. | 1,006,838 | 14.8 | 391, 526 | 5.8 | 3,766,380 | 55.4 | 1,633,785 | 24.0 |
| 1964. | 1,199,779 | 14.8 | 493,871 | 6.1 | 4,271,059 | 52.8 | 2,129,510x | 26.3 |
| 1965.................... | 1,174,309 | 13.8 | 502,330 | 5.9 | 4,840,456 | 56.8 | 2,007,984 | 23.6 |

[^310]
## 3.--Trade of Canada with Commonweaith and Preferential Countries, and Other Countries, 1946-45-concluded

| Item and Year | Britain |  | Other Commonwealth snd Preferential Countries |  | United States |  | Other Countries |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Value | P.C. of Total | Value | $\begin{aligned} & \text { P.C, } \\ & \text { of } \\ & \text { Total } \end{aligned}$ | Value | $\begin{aligned} & \text { P.C. } \\ & \text { of } \\ & \text { Total } \end{aligned}$ | Value | $\begin{gathered} \text { P.C. } \\ \text { of } \\ \text { Total } \end{gathered}$ |
| Imperts | $8{ }^{\prime} 000$ |  | \$ 000 |  | \$'000 |  | \$ 000 |  |
| 1946. | 137.423 | 7.5 | 135, 601 | 7.4 | 1,387,386 | 75.3 | 180, 857 | 9.8 |
| 1947. | 184,207 | 7.2 | 164,553 | 6.5 | 1,951,606 | 76.8 | 242,293 | 9.5 |
| 1948. | 293,535 | 11.2 | 203,932 | 7.8 | 1,798,507 | 68.7 | 322, 302 | 12.3 |
| 1959 | 302,420 | 11.1 | 186,306 | 6.9 | 1,915,227 | 70.6 | 310,072 | 11.4 |
| 1951. | 415,194 | 10.4 | 306,287 | 7.6 | 2,752,087 | 68.7 | 531.371 | 13.3 |
| 1952. | 351,541 | 9.0 | 184,345 | 4.7 | 2,887,628 | 73.7 | 492,904 | 12.6 |
| 1953. | 445,441 | 10.5 | 170,224 | 4.0 | 3,115,301 | 73.3 | 516,842 | 12.2 |
| 1954. | 382,229 | 9.6 | 181,884 | 4.6 | 2,871,279 | 72.4 | 532,010 | 13.4 |
| 1955 | 393,117 | 8.6 | 209, 265 | 4.6 | 3,331,143 | 72.9 | $634+229$ | 13.9 |
| 1956. | 476,371 | 8.6 | 220, 808 | 4.0 | 4,031,394 | 72.7 | 818,378 | 14.7 |
| 1957. | 507,319 | 9.3 | 239,054 | 4.4 | 3, 887,391 | 71.0 | 839.582 | 15.3 |
| 1958. | 518,505 | 10.3 | 210,016 | 4.2 | 3,460,147 | 68.5 | 861,824 | 17.0 |
| 1959. | 588,573 | 10.7 | 241,241 | 4.4 | 3,709,065 | 67.3 | 970,042 | 17.6 |
| 1960. | 588,932 | 10.8 | 281,167 | 5.1 | 3,686,625 | 67.2 | 925.971 | 16.8 |
| 1961. | 618,221 | 10.7 | 292,153 | 5.1 | 3,803,968 | 67.0 | 994,233 | 17.2 |
| 1962. | 583,062 | 9.0 | 318,501 | 5.1 | 4,299,539 | 68.7 | 1,076+673 | 17.2 |
| 1963 | \$26, 800 | 8.0 | 400,820 | 6.1 | 4,444, 556 | 67.8 | 1,186,033 | 18.1 |
| $1964{ }^{\text {r }}$ | 573,995 | 7.7 | 405,850 | 5.4 | 5,164,285 | 69.0 | 1,343,577 | 17.9 |
| 1965. | 619,121 | 7.2 | 372,868 | 4.3 | 6,045,105 | 70.0 | 1,596,342 | 18.5 |

I Includes Alarka and Hawaii.
4.-Trade of Canada, by Leading Countries, 1365, with Comparable Figures for 1963 and 1964

| Rank in- |  |  | Item and Country | 1963 | 1964 ${ }^{\text {r }}$ | 1985 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1963 | 1964 | 1965 |  |  |  |  |
| 12335477 |  |  | Domestic Emports | 8000 | \$ 000 | \$000 |
|  | 123 | 1 |  | 3,768,380 | $\begin{aligned} & 4,271,059 \\ & 1,199,779 \end{aligned}$ |  |
|  |  | 2 |  |  |  |  |
|  |  | 4 |  | 296.010 | - 315,943 | $1,174,309$ |
|  | 5 | 5 | Gnion of Soviet socisist kep | 150,213 |  |  |
|  | 6 | 6 | Australia. ................. | 100.773 | 114, 812 | $\begin{aligned} & 197,362 \\ & 189,493 \end{aligned}$ |
| 10 | 98 | 7 | Belgivm and Luzembourg. | 7B,493 | 100,535 | 140,372 |
| 8 |  | 8 | Netherlands... | 87,009 | 101,582 | 127,766 |
| 6 | 7 | 9 | China, Communist | 104,738 | 138,263 | 105,131 |
| ${ }^{8}$ | 17 | 10 | Italy........... | 76,761 | 62, 236 | 93.223 |
| 12 | 10 | 11 | France.. | 63,428 | 79,433 | 87.273 |
| 11 | 12 | 12 | Norway........... | 73,388 | 67,582 | 82.456 |
| 13 | 11 | 13 | Republic of Soutb Africa | 60,299 | 69,156 | 76,226 |
| 16 | 14 | 14 | Venezuela. | 46,328 | 64,075 | 73.045 |
| 15 | 15 | 15 | India. | 53,900 | 64, 042 | 58,453 |
| 26 | 18 | 18 | Cuba. | 18,433 | 60,930 | 52,594 |
| 18 | $\begin{aligned} & 13 \\ & 90 \end{aligned}$ | 18 | New Zealsid. | 65,572 30.549 | 65, 151 | 51,006 |
| 29 |  | 19 | Czechoslovakis | 13,289 | 54,230 | 36,845 |
| 24 | 19 28 28 | 20 | Spain... | -20,500 | 21,235 | 34,762 33,825 |
| 17 | 28 25 28 | 21 | Argentina | 36.992 | 26.889 | 32,820 |
| 20 | 18 | 22 | Poland.. | 27,200 | 62,653 | 31.565 |
| 21 | 22 | 23 | Jamejes. | 22,271 | 28,942 | 30.280 |
| 23 | 21 | 24 | Sweden. | 20,926 | 29,922 | 28.980 |
| 18 | 23 | 25 | Switzerland | 27,247 | 28,502 | 27.095 |
| 22 30 | 24 | 27 | Philippines <br> Peru | 21,284 | 27. 809 | 26,354 |
| 25 | 27 | 28 | Pertistan. | 11,641 19,152 | 10,749 20.681 | 21, 27.644 |
| 28 | 2829 | 2930 | Trinidad and To | 16,213 | 17,791 | 21,532 |
|  |  |  | Puerto Rico | 14,619 | 15,408 | 17, 693 |
|  |  |  | Totals, 30 Lexding Countrie | 6,487,425 | 7,723,057 | 8,158,521 |
|  |  |  | Grand Totals, Domestic Thpo | 6,798,529 | 8,094,219 | 8,525,078 |

## 4.-Trade of Canada, by Leading Countries, 1965, with Comparable Figures for 1963 and 1964-concluded

| Rank in- |  |  | Item and Country | 1963 | $1964{ }^{\text {r }}$ | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1963 | 1964 | 1965 |  |  |  |  |
|  |  |  | Imports | \$'000 | \$'000 | \$'000 |
| 1 | 1 | 1 | United States. | 4,444,556 | 5,164,285 | 6,045,105 |
| 2 | 2 | 2 | Britain.... | 526, 800 | 573,995 | 619,121 |
| 3 | 3 | 3 | Venezuela. | 243,495 | 270,621 | 254,670 |
| 5 | 4 | 4 | Japan................. | 130,471 | 174,388 | 230,204 |
| 4 | 5 | 5 | Germany, Federal Republic | 144,023 | 170,392 | 209,517 |
| ${ }_{8}$ | 6 | 6 | France..................... | 58,170 | 68,687 | 96,103 |
| 8 | 7 | 7 | Italy... | 55,303 | 67,462 | 80,279 |
| 12 | 11 | 8 | Belgium and Luxembourg | 47, 342 | 59,198 | 72,027 |
| 14 | 11 | 9 | Netherlands.. | 36,736 | 39,933 | 56,274 |
| 17 | 13 | 10 | Sweden. | 33,410 | 38,794 | 55,568 |
| 7 | 8 | 11 | Australia. | 55,650 | 59,827 | 47,317 |
| 18 | 14 | 12 | Switzerland | 32,469 | 36,932 | 43,986 |
| 9 | 15 | 13 | India. | 52,664 | 36,121 | 43,424 |
| 16 | 17 | 14 | Netherlands Antilles | 35,999 | 34,885 | 43,341 |
| 11 | 25 | 15 | Saudi Arabia. | 50,290 | 18,553 | 42,114 |
| 20 | 18 | 16 | Malaysia. | 31,454 | 34,566 | 40,272 |
| 10 | 10 | 17 | Jamaica. | 51,524 | 47,858 | 36,000 |
| 15 | 12 | 18 | Brazil... | 36,361 | 39,533 | 35,573 |
| 23 | 21 | 19 | Norway. | 23,492 | 27,335 | 33,641 |
| 13 | 19 | 20 | Iran.. | 42,799 | 31,085 | 31,765 |
| 24 | 22 | 21 | Hong Kong | 21,197 | 26,321 | 31,194 |
| 22 | 23 | 22 | Mexico.... | 23,734 | 23,186 | 27,247 |
| 19 | 20 | 23 | Republic of South Africa. | 31,548 | 28,777 | 27,113 |
| 21 | 16 | 24 | British Guiana (Guyans) | 31,334 | 35,653 | 22,549 |
| 28 | 26 | 25 | Denmark....... | 13,209 | 15,749 | 20,071 |
| 29 | 27 | 26 | Panama. | 11,057 | 15,095 | 19,414 |
| 27 | 28 | 27 | Colombia | 13,576 | 14,889 | 16,812 |
| 25 | 24 | 28 | Trinidad and Tob | 15,871 | 20,738 | 16,670 |
| 30 | 30 | 29 | Czechoslovakia.. | 9,204 | 12,847 | 15,965 |
| 26 | 29 | 30 | New Zealand. | 14,067 | 14,076 | 14,870 |
|  |  |  | Totals, 30 Leading Countrie | 6,317,805 | 7,201,781 | 8,328,206 |
|  |  |  | Grand Totals, Imports.. | 6,558,209 | 7,487,707 | 8,633,430 |

5.-Value of Domestic Exports, by Geographic Region and Country, 1958-65

| Region and Country | 1958 | 1959 | 1960 | 1961 | 1962 | 1963 | 1964 ${ }^{\text {r }}$ | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Western Europe- |  |  |  |  |  | 1,006,838 | 1,199,779 | 1,174,309 |
| Gibralta | 214 | 182 | 200 | 291 | 149 | , 185 | 110 | 60 |
| Ireland. | 8,690 | 8,156 | 7,706 | 11,588 | 10,329 | 10,461 | 15,072 | 16,664 |
| Malta and Gozo | 1,506 | 2,142 | 2,299 | 2,924 | 2,217 | 2,313 | 2,721 | 1,964 |
| Austria | 7,457 | 8,260 | 7,745 | 7,877 | 7,316 | 6,826 | 7,475 | 9,857 |
| Belgium and Luxembour | 69,531 | 56,127 | 69,131 | 76,055 | 68,169 | 76,493 | 100,535 | 128,011 |
| Denmark | 4,859 | 5,449 | 4,978 | 4,813 | 6,087 | 6,811 | 7,484 | 9,176 |
| Finland | 2,312 | 2,739 | 4,355 | 6,085 | 5,240 | 7,277 | 4,458 | 4,792 |
| France | 44,688 | 43,157 | 72,907 | 71,923 | 57,561 | 63,428 | 79,433 | 87,273 |
| Germany, Federal Repu | 201,134 | 129,345 | 165,597 | 188,694 | 177,688 | 170,969 | 211,360 | 189,493 |
| Greece. | 4,576 | 3,798 | 5,546 | 4,995 | 9,235 | 7,429 | 8,013 | 8,231 |
| Iceland | 310 | 279 | 243 | 219 | 287 | 347 | 10,459 | 10,228 |
| Italy. | 29,718 | 31,717 | 68,393 | 67,688 | 74,521 | 76,761 | 62,236 | 93,223 |
| Netherl | 74,721 | 53,849 | 62,554 | 61, 297 | 76,940 | 87,009 | 101,582 | 127,766 |
| Norway | 55,849 | 62,308 | 61,595 | 69,744 | 69,054 | 73,398 | 67,582 | 82,456 |
| Portug | 2,553 | 3,251 | 3,336 | 4,718 | 2,563 | 5,859 | 6,264 | 5,260 33 |
| Spain. | 6,675 | 6,168 | 10,243 | 12,803 | 15,416 | 20,500 |  |  |
| Sweden.. | 10,866 |  | 20,906 26,404 | 17,654 22,422 | 18,230 23,891 | 20,926 27,247 | 29,922 28,502 | 28,980 27,095 |
| Switzerlan | 29,243 | 25,728 | 26,404 | 22,422 | 23,891 | 27,247 | 28,502 | 27,095 |
| Totals, Commonwealth and Preferential Countries....... <br> Totals, Other Countries....... | 781,986 | 796,281 | 925,496 | 924,147 | 921,736 | 1,019,797 | 1,217,683 | 1,192,996 |
|  | 544,492 | 447,055 | 583,932 | 616,986 | 612,198 | 651,279 | 746,540 | 845,666 |
| Totals, Other Countries. . . . . . Totals, Western Europe. . | 1,326,478 | ,243,336 | 509,428 | ,541,133 | 533,934 | 1,671,076 | 1,964,223 | 2,038,663 |

5.-Value of Domestic Exports, by Geographic Region and Country, 1958-65-continued

| Region and Country | 1958 | 1959 | 1960 | 1961 | 1962 | 1963 | $1964 \times$ | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Eastern Europe- |  |  |  | 5,845 | 3,053 | 2 | 10,873 | 9,471 |
| Bulgaria | 70 | 200 | 491 | 277 | 388 | 28 | 19,239 | 7,364 |
| Czechoslovakia | 1,342 | 4,937 | 6,767 | 32,654 | 3,522 | 13,289 | 54,230 | 34,762 |
| Germany, Eastern |  |  | 994 | 17,972 | 148 | 1,262 | 11,739 | 15,216 |
| Hungary. | 384 | 1,115 | 931 | 564 | 350 | 374 | 1,910 | 8,352 |
| Poland. | 560 | 15,631 | 16,685 | 36,819 | 37,391 | 27,200 | 62,653 | 31,565 |
| Romanis | 1,171 | 1,157 | 1,326 | 1,037 | 514 | 1,275 | 540 | 641 |
| Union of Soviet Socialist Republics. | 18,863 | 12,638 | 8,233 | 24,276 | 3,297 | 150,123 | 315,943 | 197,362 |
| Yugoslavia. | 198 | 2,577 | 3,249 | 2,135 | 999 | 17,519 | 5,443 | 8,561 |
| Totals, Eastern Europe | 22,587 | 38,255 | 38,658 | 121,579 | 49,662 | 211,071 | 482,568 | 313,294 |
| Middle East- | 2 | 2 | 2 |  | 2 | 2 |  | 193 |
| Bahrain | 3 | 3 | 112 | 111 | 210 | 162 | 151 | 160 |
| Cyprus. | 4 | 4 | 609 | 70 | 298 | 513 | 193 | 261 |
| Qatar | 3 | 8 | 55 | 72 | 213 | 246 | 279 | 548 |
| Trucial States | 2 | 2 | 2 |  | 2 |  |  |  |
| British Middle East, n.e.s. | 1 | 7 | 61 | 165 | 159 | 127 | 138 |  |
| Ethiopia | 77 | 72 | 220 | 120 | 105 | 139 | 236 | 581 |
| Iran. | 1,648 | 2,242 | 2,499 | 4,457 | 5,293 | 3,568 | 3,372 | 3,282 |
| Iraq | 969 | 4,311 | 2,425 | 1,374 | 1,343 | 3,376 | 957 | 734 |
| Israel. | 4,501 | 4,557 | 6,184 | 8,747 | 6,232 | 8,163 | 9,109 | 6,261 |
| Jordan. | 73 | 72 | 131 | 308 | 145 | 244 | 245 | 306 |
| Kuwait |  |  | 1,0916 | $941{ }^{6}$ | 1,0406 | 2,748 | 934 | 3,582 |
| Lebano | 2,073 | 3,182 | 3,443 | 2,484 | 2,244 | 2,365 | 2,516 | 2,419 |
| Libya. | 156 | 382 | 333 | 151 | 376 | 690 | 907 | 660 |
| Saudi Ar | 2,017 | 2,877 | 2,905 | 2,697 | 3,257 | 3,548 | 3,133 | 5,343 |
| Somalia |  | 193 |  | 12 |  | 22 |  | 26 |
| Sudan. | 182 | 367 | 335 | 333 | 180 | 173 | 113 | 120 |
| Syria. | 765 | 1,067 | 674 | 364 | 561 | 713 | 387 | 665 |
| Turkey | 1,400 | 693 | 2,014 | 1,943 | 978 | 2,378 | 1,581 | 3,468 |
| United Arab Republic-Egypt... | 1,077 | 1,601 | 2,010 | 3,025 | 2,230 | 2,536 | 3,978 | 4,772 |
| Totals, Commonwealth and Preferential Countries....... | 1 | 7 | 1,927 ${ }^{7}$ | 1,3607 | 1,9207 | 1,048 | 760 | 1,227 |
| Totals, Other | 14,938 | 21,617 | 23,176 | 26,013 | 22,945 | 30,662 | 27,468 | 32,218 |
| Totals, Mid | 14,939 | 21,624 | 25,103 | 27,373 | 24,866 | 31,710 | 28,229 | 33,446 |
| Other Africa |  |  |  |  |  |  |  |  |
| Gambia. | 8 | 8 | 8 | 8 | 8 | 212 | 71 | 162 |
| Ghana | 1,272 | 3,784 | 3,879 | 7,798 | 8,400 | 5,451 | 7,333 | 5,723 |
| Kenya. |  | 806 | 936 | 586 | 680 | 1,003 | 911 | 4,605 |
| Malawi. | - | 9 | - | - |  | $\bigcirc$ | - | 90 |
| Mauritius and Dep | 107 | 68 | 77 | 95 | 94 | 218 | 94 | 236 |
| Nigeria. | 308 | 938 | 2,305 | 3,272 | 6,997 | 3,234 | 6,292 | 6,934 |
| Northern Rh | 10 | 10 |  |  |  | 826 | 1,031 |  |
| Nyasaland. | 10 | 10 | 10 | 10 | 10 | 99 | 156 | 12 |
| Republic of South Afric | 49,960 | 51,243 | 52,655 | 37,819 | 37,525 | 60,299 | 69,166 | 76,226 |
| Rhodesia. . . ${ }^{\text {a }}$. ..... |  |  |  |  |  |  |  | 3,841 |
| Rhodesia and Nyasa | 3,894 | 2,851 | 4,088 | 3,396 | 3,367 | 14 |  |  |
| Sierra Leone. | 501 | 725 | 641 | 810 | 1,200 | 1,298 | 1,329 | 1,134 |
| Southern Rhodesia | 10 | 10 | ${ }^{10} 13$ |  | 10 | 3,637 | 3,150 |  |
| Tanganyika. | 17 | 17 | 143 | 173 | 228 | 377 | 192 | 18 |
| Tanzania. | 19 | 19 | 19 | 19 | 19 | 19 |  | 316 |
| Uganda. | 17 | 17 |  |  | 137 | 148 | 259 | 1,167 |
| Zambia. | ${ }^{20}$ |  | ${ }^{20}$ |  |  | 20 | ${ }_{20}$ | 4,279 |
| British Africa, n.e.s. | 15 | 57 | 200 | 156 | 161 | 52 | 31 | 35 |
| Algeria. | ${ }^{21}$ | ${ }^{21}$ | 4,662 | 6,064 | 2,202 | 3,970 | 1,212 | 228 |
| Angola. | ${ }^{22}$ | ${ }^{22}$ |  | 160 | 44 | 104 | 75 | 228 |
| Cameroo | ${ }^{21}$ | 21 |  | ${ }^{21}$ | 92 | 24 | 39 | 157 |
| Congo. | 2,926 | 2,689 | 1,310 | 980 | 889 | 921 | 1,127 | ${ }^{872}$ |
| French Equatorial Africa |  |  | 34 | 57 | 5 |  |  |  |
| French West Africa, |  | ${ }^{21}$ | 135 | ${ }_{2}{ }^{\text {a }}$ | 775 | 21 |  | 6 |
| French Airica, $n$ | 21,008 | ${ }_{21}^{2,765}$ | ${ }_{21} 10$ | 26 | 9 | ${ }_{15}^{9}$ | 214 | 226 |

[^311]5.-Value of Domestic Exports, by Geographic Region and Country, 1958-65-continued

| Region and Country | 1958 | 1959 | 1960 | 1081 | 1962 | 1963 | 1884 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$000 | \$ 000 | \$'000 | \$ 000 | \$'000 | \$ 000 | \$'000 | \$ ${ }^{\prime} 00$ |
| Other Africa-concluded <br> Guinea <br> Ivory Coast <br> Liberia. <br> Malagasy. <br> Mauritania <br> Moroceo. <br> Mozambique <br> Portuguese Africa, n.e.s., <br> Spanish Africa. <br> Togo <br> Tunisis. |  |  |  |  |  |  |  |  |
|  |  |  | -9 | 140 | 131 |  | 4. | 81 |
|  | 652 |  | $t$ | 501 | ${ }^{10}$ | 18 | ${ }^{66}$ | 49 |
|  |  |  | 13 |  |  | 1, | , | 108 |
|  |  | 7 |  |  |  | 258 | 165 | 657 |
|  | 1,152 | 416 | 627 | 476 | 459 | 963 | ${ }^{667}$ | 391 |
|  | 1.326 | 2,012 | 3,145 | 2,023 | 2,504 | 2,648 | 1, 806 | 3,282 |
|  | 320 | 305 | 278 | 241 | 197 | 283 | 164 | 367 |
|  |  | 12 | 28 | 40 | 118 | 27 | 229 | 112 |
|  | ! | 1 | ${ }^{1} 170$ | 561 | 105 30 | r 350 | 443 827 | 317 86 |
| Totals, Commonwealth and Preferential Conntries. | 56,529 | 60,473 | 85,010 | 54,172 | 58,790, | 76,853 | 90,012 | 104,748 |
| Totals, Other Conntries........ | 7.368 | 8,406 | 11,12t | 11,385 | 8.448 | 12,738 | 12,207 | 0, 101 |
| Totak, Other Africa........ | 63,915 | ¢8,878 | 76,130 | 65,558 | 47,289 | 8\%,591 | 162,219 | 113,84\% |
| Other Asia- |  |  |  |  |  |  |  |  |
| Ceylon | 5,459, | 4,981 | 2,479 | 3,799 | 2,007 | 2,836 | 4,724 | 2.189 |
| Hong Kong | 78.028 | 11,182 | 21,065 | 19,604 | 14,283 | 17,490 | 22.278 | 18,734 58,453 |
| Malaysia | 3,223 | 3,258 | 4,660, | 5,698 | 5, 5 , 53 | 6,999 | +8,370 | 9,253 |
| Pakistan | 15,311 | 17,317 | 11,942 | 15,315 | 10.755 | 19,152 | 20,081 | 21,643 |
| Britigh East Indies, | 112 | 95 | 360 | 457 | 435 |  |  |  |
| Aighanist | 24 | 67 | 159 | 55 | 25 | 18 | 23 | 23 |
| Burms. | 944 | 817 | 806 | 1, 405 | 1,303 | 703 | 738 | ${ }^{671}$ |
| Cambodia and Laoe |  | 5 | 148 | 125 114 |  | +01.788 | 138 ${ }^{98}$ | ${ }^{108} 128$ |
| Chins, Communist | 7,809 | 1.720 | 8.737 | 125, 448 | 147.438 | 104,738 | 136,283 | 105,131 |
| Indonesia | 1,665 | 1,760 | $\xrightarrow{2,110}$ | 231, ${ }^{2} 74$ | 214,535 | 296.449 | 330, 234 | 816,187 |
| Japan, | 104.853 3.682 | 139,724 6,000 | 178,859 3,916 | 231,574 | 21, 1,492 | - | 351,096 | 316.187 |
| Kores. | 14,077 | 14, 8 83 | 14,809 | 15,645 | 18,545 | 21,284 | 27,809 | 26, 354 |
| Portuguese Asia | ${ }^{14} 34$ | 14,358 | 14,93 | -59 |  | 38 |  |  |
| Portuguese India. |  |  | 385 | 445 | 4387 | 7750 | 6. 178 |  |
| Taiwan (Republic of China) | 1.161 | 1,692 | 2,888 | 2,219 | 4,387 | 3,759 | 6.178 | 6.577 |
| Thailand. | $\begin{array}{r}1,288 \\ \hline 249\end{array}$ | $\begin{array}{r}1,937 \\ \hline 885\end{array}$ | 2,710 540 | 2,921 | $\begin{array}{r}3,472 \\ \hline 298\end{array}$ | 2,823 | $\begin{array}{r}3.803 \\ \hline 726\end{array}$ | 5,821 |
| Totals. Commonwealth and Preferential Countries..... | 109, 127 | 90, 447 | 77,920 | 87,755 | 62,566 | 100,178 | 119,445 | 108,282 |
| Totals, Other Countries........ | 136,095 | 169,324 | 216, 159 | 384,622 | 383,54 | 434,903 | 507,623 | 464,002 |
| Totak, Other Asi | 245, z\% 2 | 259,771 | 294.67 | 172,376 | 456,112 | 535,079 | 627,015: | 572,284 |
| Oceaniz- | 52,562 | 53,929 |  | 78,628 | 104,965 | 100,773 |  | 140,372 |
|  | 814 | 727 | 808 | ${ }^{607}$ | 705 | 759 | 145,812 | 1,115 |
| New Zealind | 15,008 | 13,306 | 23,858 | 31,125 | 26.784 | 30,549 | 891 | 36,845 |
| British Oceanja, n.e.s............ |  | 65. | 324 | 191 | 296 | 249 | 33,714 | 317 |
| French Oceani | 271 | 171 | 313 | 303 | 306 | 299 | 436 | 508 |
| United States Oceanis........... | 138 | 167 | 640 | 1,293 | 3,084 | 3,693 | 1,261 | 828 |
| Totals, Commonwealth and Preferential Countries.. | 68,483 | 68,027 | 123,852 | 110,551 | 132,750 | 132,330 | 180,804 | 178,650 |
| Totals, Other Countries........ | 409 | 338 | 95 | 1,590 | 3,451 | 3,992 | 1,697 | 1,336 |
| Totak, Oceaula. | 68,892 | 48,365 | 124,805 | 112,147 | 136,20 | 136,322 | 182,501 | 179,984 |
| South America |  |  |  |  |  |  |  |  |
| British Guiana ................... | 4, 58 | 4.216 |  |  | 13 |  |  |  |
| Argentina. | 6,428 | 7,002 | 18,364 | 30,893 | 22,546 | 36,992l | 26.880 | 32,720 |

[^312]
## 5.-Value of Domestic Exports, by Geographic Region and Country, 1958-65-concluded

| Region and Country | 1958 | 1959 | 1960 | 1961 | 1962 | 1963 | 1964 ${ }^{\text {r }}$ | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 8'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| South America-concluded |  |  |  |  |  |  |  |  |
| Bolivia | 21.414 | 14,148 | ${ }_{19}{ }^{323}$ | 30,076 | 28,481 | 29,432 | 22.985 | 17,687 |
| Chile | 4,566 | 6,226 | 6,575 | 8,225 | 13,278 | 12,329 | 12,659 | 10,514 |
| Colombi | 13,813 | 17,668 | 16,590 | 19,525 | 19,887 | 23,348 | 21,252 | 17,362 |
| Ecuador | 3,185 | 3,864 | 3,913 | 3,922 | 3,777 | 3,913 | 5,719 | 4,672 |
| French Guia | 2 |  |  | 15 | 5 | 2 |  | 54 |
| Paraguay. | 183 | 1114 11 | - 120 | 69 8 | ${ }_{8}^{41}$ | ${ }_{11} 211$ | ${ }^{485}$ | 177 |
| Peru. | 11,441 | 11,632 | 8,891 | 8,188 | 8,140 | 11,641 | 10,749 | 21,864 |
| Surinam | 853 | 696 | 883 | 1,224 | 866 | 1,031 | 1,610 | 1,283 |
| Uruguay | 938 | 1,656 | 2,423 | 3,039 | 3,151 | 2,994 | 5,679 | 3,283 |
| Venezuela | 43,480 | 45,833 | 35,345 | 34,978 | 42,328 | 46,328 | 64,075 | 73,045 |
| Totals, Commonwealth and Preferential Countries...... | 4,067 | 4,608 | 7,597 | 5,296 | 5,115 | 5,067 | 7,117 | 7,754 |
| Totals, Other | 106,392 | 109,166 | 114,184 | 140,507 | 142,863 | 168,848 | 173,090 | 184, 168 |
| Totals, | 110,459 | 113,773 | 121,780 | 145,803 | 147,978 | 173,915 | 180,207 | 191,922 |
| Central America and Antilles- |  |  |  |  |  |  |  |  |
| Bahamas | 2,541 | 3,083 | 3,357 | 3,798 | 5,010 | 6,133 | 8,876 | 9,257 |
| Barbados | 4,159 | 4,103 | 3,775 | 3,977 | 4,481 | 5,469 | 6,922 | 6,826 |
| Bermuda | 3,195 | 4,334 | 4,016 | 4,239 | 4,492 | 5,713 | 6,339 | 5,984 |
| British Ho | 229 | 289 | 409 | 600 | 835 | 698 | 973 | 1,065 |
| Jamaica. | 15,588 | 18,538 | 18,056 | 19,077 | 21,891 | 22,271 | 28,942 | 30,280 |
| Leeward and Windward Islands.. | 4,248 | 4,437 | 4,720 | 4,828 | 5,642 | 6,596 | 7,986 | 8,037 |
| Trinidad and Tobago............ | 11,548 | 12,636 | 12,971 | 18,398 | 14,817 | 16,213 | 17,791 | 21,532 |
| Costa Rica. | 2,879 | 2,633 | 2,983 | 2,931 | 3,473 | 3,651 | 3,841 | 5,397 |
| Cuba. | 17,549 | 15,222 | 13,038 | 31,104 | 10,878 | 16,433 | 60,930 | 52,594 |
| Dominican P | 5,335 | 5,137 | 5,062 | 4,469 | 8,488 | 9,085 | 9,070 | 6,152 |
| El Salvador | 2,146 | 2,567 | 2,390 | 2,436 | 3,354 | 3,134 | 4,416 | 4,051 |
| French West |  | 19 |  | 75 | 53 | 66 | 135 | 144 |
| Guatemal | 3,645 | 2,627 | 2,106 | 2,188 | 2,705 | 3,107 | 3,433 | 4,001 |
| Haiti. | 2,079 | 1,319 | 1,529 | 1,543 | 1,277 | 1,525 | 1,485 | 1,302 |
| Hondura | 1,201 | 946 | 1,416 | 1.061 | 899 | 1,100 | 1,260 | 1,005 |
| Mexico | 31,429 | 27,633 | 38,023 | 38,529 | 41,267 | 55,572 | 65,151 | 51,006 |
| Netherlands | 1,583 | 1,193 | 1,131 | 1,239 | 1,793 | 2,406 | 2,355 | 3,004 |
| Nicaragu | 1,886 | 1,515 | 1,319 | 1,448 | 2,135 | 2,693 | 2,209 | 2,805 |
| Panama | 5,370 | 4,023 | 3,703 | 4,578 | 5,645 | 4,417 | 4,602 | 4,622 |
| Puerto Rico. | 12,526 | 10,522 | 11, 172 | 13,109 | 12,711 | 14,619 | 15,408 | 17,693 |
| United States Virgin Islands | 132 | 185 | 214 | 190 | 283 | 284 | 1,317 | 1,571 |
| Totals, Commonwealth and Preferential Countries..... | 41,507 | 47,421 | 47,304 | 54,917 | 57,167 | 63,093 | 77,829 | 82,981 |
| Totals, Other Count | 87,786 | 75,540 | 84,127 | 104,900 | 94,961 | 118,092 | 175,612 | 155,348 |
| and Antilles | 129,294 | 122,961 | 131,431 | 159,818 | 152,129 | 181,185 | 253,441 | 238,329 |
| North AmericaGreenland. St. Pierre and Miqu United States ${ }^{1}$....... | $\left\lvert\, \begin{array}{r} 138 \\ 1,444 \\ 2,808,067 \end{array}\right.$ | 154 1,403 $3,083,151$ | $\left\{\begin{array}{r} 427 \\ 1,563 \\ 2,932,171 \end{array}\right.$ | $\begin{array}{r} 198 \\ 3,107,176 \end{array}$ | $\begin{array}{r} 167 \\ 1,799 \\ 3,608,439 \end{array}$ | $\left\|\begin{array}{r} 287 \\ 1,913 \\ 3,766,380 \end{array}\right\|$ | $\begin{array}{r} 272 \\ 2,431 \\ 4,271,059 \end{array}$ | $\begin{array}{r} 137 \\ 2,713 \\ 4,840,456 \end{array}$ |
| Totals, North America | 2,809,650 | 3,084,708 | 2,934,162 | 3,109,199 | 3,610,404 | 3,768,580 | 4,273,762 | 4,843,307 |
| Grand Totals, Commonwealth and Preferential Countries. | 1,061,701 | 1,067,263 | 1,249,104 | 1,238,198 | 1,240,045 | 1,398,364 | 1,693,650 | 1,676,638 |
| Grand Totals, Other Countries | 3,729,735 | 3,954,409 | 4,006,470 | 4,516,788 | 4,938,479 | 5,400,165 | 6,400,569 | 6,848,440 |
| Grand Totals, All Countries. | 4,791,436 | 5,021,6z2 | 5,255,575 | 5,754,986 | 6,798,523 | 6,178,529 | 8,094,219 | 8,525,078 |

[^313]6.-Value of Imports, by Geographic Region and Country, 1958-65

| Region and Country | 1958 | 1959 | 1960 | 1961 | 1962 | 1963 | 1964 ${ }^{\text {r }}$ | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Western Europ |  |  |  |  |  |  |  |  |
| Britain....... | 518,505 | 588,573 | 588,932 | 618,221 | 563,062 | 526,800 | 573,995 | 619,121 |
| Gibraltar |  |  |  |  | - |  | 13 |  |
| Ireland. | 1,313 | 2,001 | 2,098 | 3,806 | 4,826 | 5,320 | 5,624 | 6,861 |
| Malta and |  |  |  |  |  | 232 | 113 | 387 |
| Austria. | 4,640 | 5,707 | 6,605 | 6,636 | 7,971 | 9,026 | 9,595 | 12,281 |
| Belgium and Luxer | 35,759 | 44,786 | 41,401 | 44,780 | 48,672 | 47,342 | 59,198 | 72,027 |
| Denmark | 7,401 | 9,227 | 9,962 | 11,650 | 13,278 | 13,209 | 15,749 | 20,071 |
| Finland | 475 | 875 | 1,053 | 1,215 | 1,939 | 2,520 | 3,177 | 2,762 |
| France | 40,007 | 56,940 | 50,121 | 54,280 | 56,160 | 58,170 | 68,687 | 96,103 |
| Germany, Federal Repu | 102,644 | 123,905 | 126,988 | 136,530 | 141,198 | 144,023 | 170,392 | 209,517 |
| Greece, | 316 | 310 | 538 | 545 | 1,094 | 1,631 | 1,550 | 1,838 |
| Iceland |  | 40 | 15 | 707 | 1,183 | 696 |  | 659 |
| Italy | 32,150 | 37,656 | 42,843 | 49,140 | 51,859 | 55,303 | 67,462 | 80,279 |
| Netherla | 26,905 | 29,154 | 31,456 | 33,493 | 37,049 | 36,736 | 39, 933 | 56,274 |
| Norway | 3,106 | 4,063 | 4,248 | 8,965 | 16,109 | 23,492 | 27,335 | 33,641 |
| Portuga | 3,045 | 3,116 | 3,208 | 4,917 | 5,998 | 7,713 | 9,414 | 11,053 |
| Spain. | 6,681 | 5,627 | 6,947 | 8,543 | 8,463 | 8,496 | 11,704 | 13,280 |
| Sweden | 13,939 | 18,077 | 20,409 | 24,221 | 25,873 | 33,410 | 38,794 | 55,568 |
| Switzerl | 26,491 | 24,514 | 24,343 | 26,102 | 28,040 | 32,469 | 36,932 | 43,986 |
| Totals, Commonwealth and Preferential Countries....... | 519,881 | 590,748 | 591,054 | 622,053 | 567, 924 | 532,352 | 579,746 | 626,370 |
| Totals, Other Countries....... | 303,566 | 363,996 | 370,138 | 411,722 | 444,887 | 474,236 | 559,924 | 709,338 |
| Totals, West | 823,446 | 954,744 | 961,191 | 1,033,775 | 1,012,811 | 1,006,588 | 1,139,670 | 1,335,709 |
| Eastern Europe |  |  |  |  |  |  |  |  |
| Albania. | - 4 | 6 |  | 24 | 34 | 74 | 114 | 526 |
| Czechoslova | 4,908 | 6,440 | 6,654 | 8,405 | 9,033 | 9,204 | 12,847 | 15,965 |
| Germany, Easter | 948 | 901 | 877 | 970 | 881 | 1,207 | 1,473 | 1,584 |
| Hungary | 701 | 237 | 338 | 393 | 417 | 557 | 761 | 1,561 |
| Poland. | 1,131 | 1,643 | 1,871 | 3,194 | 4,792 | 6,788 | 9,280 | 11,815 |
| Romania. |  | 35 | 84 | 261 | 61 | 124 | 82 | 238 |
| Union of Soviet Socialist Republics. | 1,676 | 2,278 | 3,210 | 2,746 | 1,777 | 2,313 | 2,808 | 9,885 |
| Yugoslavia....................... | 813 | 551 | 804 | 1,665 | 1,801 | 1,843 | 2,601 | 2,967 |
| Totals, Eastern Euro | 10,185 | 12,090 | 13,844 | 17,659 | 18,795 | 22,109 | 29,966 | 44,541 |
| Middle East- |  |  |  |  |  |  |  |  |
| Bahrain | ${ }^{3}$ | 3 | - |  | - | 1 | - |  |
| Cyprus | 4 | 4 | 180 | 194 | 151 |  | 48 | 291 |
| Qatar. | 3 | 8 | 8,434 | 8,724 | 6,273 | 8,678 | 2,285 | 2,732 |
| Trucial States. British Middle East, n.e | 62 | 400 | ${ }^{2} 59$ | ${ }^{2} 48$ | 68 | 56 | $\stackrel{2}{3,183}$ | ${ }_{6}^{1,741}$ |
| Ethiopia | 18 | 44 | 43 | - 4 | 5 | 21 | 141 | 66 |
| Iran. | 915 | 11,948 | 30,740 | 21,622 | 31,736 | 42,799 | 31,085 | 31,765 |
| Iraq. | 1,556 | 1,107 | 722 | 846 | 704 | 1,269 | 2,379 | 5,284 |
| Israel. | 1,725 | 2,349 | 2,372 | 3,106 | 5,646 | 6,043 | 6,270 | 6,656 |
| Jordan. |  |  |  |  |  |  |  |  |
| Kuwait. | 3 | 3 | 22,3036 | 20,2256 | 10,0346 | 5,169 | 11,219 | 11,505 |
| Lebanon |  | 4 |  |  | 58 10 |  |  | 5 |
| Libys. |  | 70.725 | $\stackrel{1}{37} 402$ | ${ }_{41}^{1} 393$ | 40,551 | 50,290 | 18,553 | 42,114 |
| Somalia. | 68,021 | 70, 22 | 37,102 |  |  |  | 1 |  |
| Sudan. | 80 | 438 | 83 | 76 | 105 | 148 | 113 | 138 |
| Syria. | 200 | 183 | 127 | 263 | 455 | 362 | 492 | 515 |
| Turkey | 491 | 886 | 855 | 859 | 1,472 | 1,294 | 1,207 | 1,055 |
| Totals, Commonwealth and Preferential Countries....... | 179 | 200 | 846 | 474 | 301 | 224 | 125 | 221 |
|  | 62 | 400 | 30,975 ${ }^{7}$ | 29,1927 | 16,5257 | 8,823 | 5,516 | 5,118 |
| Totals, Other Countries....... | 73,198 | 87.887 | 73,224 | 68,668 | 81,044 | 107,688 | 71,675 | 99,379 |
| Totals, Middle East. . | 73,261 | 88,286 | 104,200 | 97,861 | 97,569 | 116,511 | 77,191 | 104,496 |

[^314]6.-Value of Imports, by Geographic Region and Country, 1958-65-continued

| Region and Country | 1958 | 1959 | 1960 | 1961 | 1962 | 1963 | 1964 ${ }^{\text {r }}$ | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Other Af | 2,122 | 4,103 | 3,127 | Other Afr |  |  |  |  |
| Kenya | 5,057 | 4,261 | 2,561 | 3,629 | 3,157 | 5,323 | 7,397 | 6,862 |
| Malawi |  |  | 1 |  |  |  |  | 391 |
| Mauritius and Dependencies | 5,918 | 7,584 | 2,100 | 5,600 | 5,215 | 8,606 | 13,394 | 6,456 |
| Nigeria. | 2,372 | 3,084 | 4,358 | 3,504 | 5,726 | 7,924 | 11,264 | 11,252 |
| Northern Rhodesia |  |  |  |  |  | 1,306 | 37 |  |
| Nyasaland. | $\stackrel{2}{7}$ | ${ }^{2}$ | ${ }^{2}$ | ${ }^{2}$ | ${ }^{2}$ | 408 | 297 |  |
| Republic of South Africa | 7,914 | 6,564 | 11,482 | 12,202 | 16,952 | 31,548 | $\underset{5}{28,777}$ | 27,113 |
| Rhodesia and Nyasaland......... | 1,373 | 966 |  | 1,318 |  |  | 63 |  |
|  |  |  | $\begin{array}{r} 981 \\ 5 \end{array}$ |  | 3,272 22 | ${ }^{6} 5$ |  | ${ }_{8}^{311}$ |
| Sierra Leone...... |  |  | 2 |  |  | 6,320 | 4,279 |  |
| Tanganyika | , | , | 1,834 | 2,139 | 2,173 | 7,315 | 9,061 | 10 |
| Tanzania | 11 | 11 |  |  |  |  |  | 6,907 |
| Uganda | 9 | 9 | 1,277 | 2,325 | 2,213 | 3,144 | 4,582 | 6,800 |
| Zambia. | 12 | 12 |  |  |  |  |  | 2 |
| British Africa, | 13 | 18 | 5 | 53 | 7 | 4 | 3 | 4 |
| Algeria. | 14 | 14 | 161 | 162 | 509 | 458 | 61 | 98 |
| Angola. | 15 | 15 | 209 | 136 | 122 | 728 | 1,297 | 1,415 |
| Camero | 14 | 14 | 14 |  | 15 | 147 | 43 | 121 |
| Congo. | 1,125 | 2,258 | 1,781 | 1,314 | 1,320 | 1,921 | 1,911 | 1,661 |
| French Equatorial | 14 | 14 | 185 | 27 |  |  |  |  |
| French West Africa. | 14 | 14 | 270 | 1 | 13 | 14 |  |  |
| French Africa | 1,749 | 2,183 | 33 | 29 | 17 | 310 | 1,263 | 68 |
| Gabon. |  |  | 14 | 658 | 1,123 | 859 | 687 | 274 |
| Guinea | 14 | 14 | 2,794 | 4,824 | 896 | 2,501 | 1,707 | 1,066 |
| Ivory Co | 14 | 14 |  | 788 | 244 | 227 | 623 | 247 |
| Liberia. | 147 | 39 |  | 144 | 40 | 106 | 327 | 208 |
| Malagasy | 14 |  |  | 14 |  |  |  | 668 |
| Morocco | 130 | 209 | 222 | 164 | 487 | 540 | 1,162 | 278 |
| Mozambique | 24 | 18 |  | 30 | 139 | 395 | 431 | 633 |
| Portuguese Africa, Spanish Africa. | 11 | -8 |  | - 17 |  | -39 |  | 6 |
| Togo. | 14 |  |  |  |  |  |  | 6 |
| Tunisia | 14 | 14 | 62 | 32 | 17 | 2 | 19 | 19 |
| Totals, Commonwealth and Preferential Countries........ | 24,759 | 26,563 | 27,729 | 35,469 | 45,772 | 78,433 | 87,055 | 79,664 |
| Totals, Other Countries....... <br> Totals, Other Africa | 3,195 | 4,715 | 5,728 | 8,327 | 4,962 | 8,23 | 9,553 | 6,767 |
|  | 27,954 | 31,278 | 33,456 | 43,796 | 50,734 | 86,66 | 96,608 | 86,431 |
| Other Asia- |  |  |  |  |  |  |  |  |
| Ceylon. | 12,863 | 15,133 | 15,556 | 16,516 | 14,763 | 14,642 | 13,413 | 14,036 |
| Hong Ko | 8,689 | 12,969 | 15,534 | 14,143 | 18,889 | 21,197 | 26,321 | 31,194 |
| India. | 27,655 | 29,221 | 29,352 | 33,465 | 43,479 | 52,664 | 36,121 | 43,424 |
| Malaysia | 19,863 | 28,644 | 28,120 | 23,597 | 27,740 | 31,634 | 34,566 | 40,272 |
| Pakistan | 460 | 1,061 | 985 | 2,367 | 2,561 | 2,270 | 4,211 | 3,654 |
| British East Indies, n.e.s. | 129 | 390 | 261 | 297 | 11 |  |  |  |
| Afghanistan | - | - | - | 13 | - | - | - | - |
| Burma.... |  | 24 | 85 | 30 |  | 102 | 276 | 39 |
| Cambodia and Laos |  |  | 17 | 2 |  |  |  |  |
| China, Comm | 5,370 | 4,840 | 5,638 | 3,233 | 4,521 | 5,147 | 9,420 | 14,444 |
| Indonesia | 211 | 147 | 529 | 290 | 173 | 152 | 1,393 | 2,365 |
| Japan. | 70,092 | 102,669 | 110,382 | 116,607 | 125,359 | 130,471 | 174,388 | 230,204 |
| Korea. |  | 235 | 404 |  | 99 | 380 | 473 | 1,468 |
| Philippines | 2,177 | 1,440 | 1,966 | 1,517 | 1,447 | 2,007 | 2,970 | 3,583 |
| Portuguese Asia |  |  |  |  | 77 | 428 | 1,204 | 1,919 |
| Taiwan (Republic of C | 159 | 716 | 1,150 | 1,856 | 2,910 | 5,875 | 9,063 | 9,333 |
| Thailand. | 643 | 649 | 842 | 582 | 1,031 | 582 | 582 | 899 |
| Totals, Commonwealth and Preferential Countries........ |  |  |  |  |  |  |  |  |
|  | 69,659 | 87,418 | 89,807 | 90,384 | 107,943 | 122,407 | 114,633 | 132,580 |
| Totals, Other Countries. . | 78,762 | 110,728 | 121,020 | 124,202 | 135,67 | 145, 14 | 199,772 | 264,256 |
| otals, Other Asla | 148,422 | 198,146 | 210,827 | 214,586 | 243,616 | 267,552 | 314,405 | 396,837 |

[^315]6.-Value of Imports, by Geographic Region and Country, 1858-65-continued

| Region and Country | 1958 | 1959 | 1960 | 1961 | 1962 | 1963 | $1964{ }^{\text {r }}$ | 1905 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$ 000 | \$ 000 | \$000 | \$'000 | \$'000 | \$ ${ }^{\prime} 000$ | \% 000 |
|  |  |  |  |  |  |  |  |  |
| Australis | 32.755 | 41,080 | 35,508 | 36,649 | 45.21 f | 55, 850 | 59, 827 | 47,317 |
| Fiji | 5,727 | 4,764 | 6,481 | 2.512 | 3,144 | 8,588 | 7,401 | 4,801 |
| New Zealand. | 11.540 | 8,594 | 10,099 | 10,546 | 12,005 | 14,067 | 14,078 | 14,870 |
| British Oceania, n.e.8. <br> French Oceania <br> United States Oceania. $\qquad$ |  | 157 |  |  |  |  |  |  |
|  | ${ }^{1}$ |  | - 21 | 40 55 | 214 | 27 | 3,559 | 5,092 138 |
| Totals, Commonwealth and Preferential Countries. | 50,182 | 54, 595 | 52,087 | 49.706 | 60,365 | 78,310 | 81,310 | 66,889 |
| Totals, Other Countries. . . . . . | , | 1 | 21 | 96 | 214 | 27 | 3,586 | 5,229 |
| Totals, Ocea | 50,188 | 54,597 | 52,109 | 45,802 | 60,578 | 78,338 | 84,896 | 72,218 |
|  |  |  |  |  |  |  |  |  |
| Britiah Guisns. <br> Falkland Islands. | 20,627 | 18,033 | 18,921 8 | 23,030 8 | 23,875 | 81,334 | ${ }^{35,653}$ | 22,549 |
| Argentina | 5,357 | 3,380 | 3,611 | 3,399 | 5,649 | 5,352 | 5,988 | , 400 |
| Bolivia | 132 | 166 | 443 | 883 | 957 | 70 | 289 | 384 |
| Brazil | 27,419 | 28,479 | 24,883 | 29,081 | 31,600 | 38,381 | 39,533 | 35,573 |
| Chile | 823 | 870 | 747 | 1.217 | 1.117 | 1,27! | 1,755 | 1,713 |
| Colomb | 16,574 | 15,827 | 12,784 | 13,023 | 15,858 | 13,576 | 14,889 | 16,812 |
| Eruador. | 4,962 | 7,623 | 11,018 | 7,682 | 8,611 | 7,625 | 9,353 | 8,548 |
| French Gu |  | - | $\cdots$ | - |  |  |  |  |
| Paraguay | 347 | 746 | 760 | 874 | ${ }^{378}$ | 831 | 547 | 455 |
| Peru. | 2,326 | 3,978 | 3,037 | 4,283 | 3.225 | 3,770 | 7,792 | 9,053 |
| Surinam | 2,270 | 2,872 | 4,156 | 3,482 | 4,057 | 6,158 | 6,978 | 8,702 |
| Uruguay | ${ }^{820}$ | ${ }^{6} 457$ | ${ }^{105} 988$ | ${ }_{21,834}$ | ${ }^{793}$ | ${ }^{43} 888$ | ${ }^{970} 988$ | ${ }^{8545}$ |
| Venezuel | 209,538 | 204,582 | 195, 189 | 216,640 | 224.275 | 243, 495 | 270, 621 | 254,670 |
| Totals, Commonwealth and Preferentisl Countries....... | 20,627 | 18,054 | 18,929 | 23,038 | 23.375 | 81,834 | 35,653 | 22,549 |
| Totals, Other Countries....... | 270,568 | 269,180 | 257,615 | 282, 349 | 296,329 | 819,879 | 358,664 | 342,283 |
| Totals, South Ame | 291,194 | 287,213 | 276,544 | 305,387 | 319,763' | 350,714 | 354,317 | 364,832 |
| Central America and Antilies- |  |  |  |  |  |  |  |  |
| Bahamas | 146. | 233 | 2.611 | 484 | ${ }^{217}$ | 428 | 412 | 533 |
| Barbados | 3,735 | 4,709 | 2,417 | 4.980 | 3,170 | 3,954 | 3,851 | 3,041 |
| Bermuda | 276 | 1,291 | 701 | 224 | 136 | 262 | 190 | 403 |
| Britiab Ho | 136 | 92 | 91 | 701 | ${ }^{629}$ | 1,720 | 1,858 | 1,225 |
| Jamsica. | 27,491 | 31,012 | 37,688 | 38,511 | 38,721 | 51,524 | 47,858 | 38,000 |
| Leeward andWindward | 1,761 | 1,989 | 1,498 | 1,25t | 1,68 ${ }^{\text {a }}$ | 2,202 | 1,006 | ${ }_{8} 832$ |
| Trinidad and Tobago............ | 9,807 | 12,731 | 14,512 | 14,375 | 14,100 | 15,87] | 20,738 | 18,670 |
| Costa Rica | 7,127 | 4,810 | 4,345 | 4,227 | 6,259 | 7,308 | 8,393 | 6,715 |
| Cubs. | 18,836 | 12,011 | 7,243 | 5.034 | 2,803 | 13,041 | 3,464 | 5,304 |
| Dominican Repres | 2,659 | 1,634 | 1,586 | 1,269 | 1,912 | 2,281 | 5,093 | 2,050 |
| El Salvador. | 1,186 | 3.899 | 829 | 1,307 | 1,848 | 1,960 | 3,356 | 2,696 |
| French West | 5 |  | 28 | ${ }^{428}$ | - 326 | 9578 | ${ }_{2} 263$ |  |
| Guatemal | 3,585 | 2.718 | 3,256 | 2,536 | 1,796 | 2,557 | 2.422 | 2,879 |
| Haiti.... | 1,073 4,903 | 1,053 | 3, 3,382 | 7,310 <br> 8.39 | -7,666 | 1,159 8,868 | 2,056 7,670 | 1,019 10.193 |
| Мед̇со. | 31,888 | 34,201 | 21,007 | 18,193 | 24,416 | 23,734 | 23,186 | 27,247 |
| Netherlsads Antille | 39, 453 | 47,120 | 32,521 | 31, 137 | 35,858 | 35,999 | 34, 885 | 43,341 |
| Nicaragua | 2,657 | 308 | 170 | 208 | 107 | 383 | 727 | 19.247 |
| Panama. | 7,478 | 8.889 | 6.056 | 6,168 | 8,321 |  |  | 19,414 |
| Puerto Rico......... | 1,433 | $\begin{array}{r} 1,780 \\ 32 \end{array}$ | 2,904 | 2,359 | ${ }_{1}^{2,713}$ | 2,390 | 3,554 | 2,759 |
| Totals, Commonwealth and Prelerential Countries...... | 43,352 | 52,057 | 59,518 | 60,535 | 59,658 | 75.960 | 75,038 | 58,714 |
| Totals, Other Countries. . . . . . | 122,333 | 121,365 | 84,322 | 81.067 | 94,541 | 109,025 | 110, 137 | 124,471 |
| Totals, Central America and Antilles. | 165,075 | 178,422 | 143,839 | 141, 4 ¢ 8 | 154,190 | 184, 885 | 184,0\% | 183,185 |

[^316]G.-Value of Imports, by Geographic Region and Country, 1958-65-concluded

| Region and Country | 1958 | 1959 | 1980 | 1961 | 1982 | 1963 | 1964r | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$000 | \$000 | \% 000 | \$ 000 | \$060 | \$ 000 | \% ${ }^{\prime} 000$ | \$'000 |
| North Americz Greenland. St. Pierre and Miquelon. United States². | 8 | 53 | 1 | 102 | 111 | 108 | 110 |  |
|  | 18 | 27 | 600, | 42 | 118 | 84 | - 189 | ${ }^{76}$ |
|  | 3,460,147 | 3,709,005 | 3,686,625 | 3,883, 888 | 4,299,539 | 4,444,556 | 5,164,285 | 6,045,105 |
|  | 3,460,174 | 3,769,145 | 3,686,685 | 3,864,111 | 4,243, 760 | 4,444,746 | 5,164,585 | 6,045,181 |
| Grand Tetals, Commonwealth and Preferential Countries. . | 728,521 | 879,814 | 870,095 | 910,377 | 881,563 | 927,620 | 979,845 | 981,983 |
| Grand Totals, Other Countries Grand Totals, All Countries. | 4,321,371 | 4, 679,107 | 4,612,5\%7 | 4,858, 201 | 5,376,918 | 5,634,589 6 | 6,507,862 | 7,611,446 |
|  | 5,050,492, | 5,503,521 | 5,482, 695 | 5,768,578\| | 4,257,776\| | 6,558,205 | 7,487,707\| | 8,633,430 |

${ }^{1}$ Lese than $\$ 500$. ${ }^{2}$ Includes Alaska and Hawaii.
The proportion of imports subject to duty varies widely between countries and geographic areas. Generally, the Canadian tariff imposes duties on a greater proportion of manufactured goods than of natural products. Countries supplying chiefly manufactures to Canada tend to have duties charged on a greater proportion of their goods and also to have relatively higher average ad valorem rates of duty charged on their goods than is the case with countries supplying chiefly natural producta. Variations in the proportion of imports dutiable as between different countries or in the average ad valorem rates of duty charged on imports from different countries therefore do not necessarily indicate differences in the tariff relations between Canada and these countries.

## 7.-Values of Dutiable and Free Imports, by Geographic Region and Leading Countries, 1963-65

| Region and Country | 1963 |  |  | 1964 ' |  |  | 1965 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Dutisble | Free | Total | Dutiable | Free | Total | Dutiable | Free | Total |
| Western Europe......... Britain | \$000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$000 | \$000 | \$'000 |
|  | 576,783 | 439,805 | 1,406,688, | 650,727 | 488,944 | 1,139,670 | 791,303 | 544,406 | 1,335,763 |
|  | 212.768 | 314,033 | 526,800 | 223,478 | 350,518 | 573,995 | 249,612 | 369,509 | 619,121 |
|  | 8,071 | 955 | 9,02 | 8,712 | 884 | 9,595 | 11,18 | 1,087 | 12,281 |
|  | 34,327 | 13,015 | 47.342 | 45,024 | 14,174 | 59,198 | 7,736 | 14,291 |  |
|  | 8,861 | 4,348 | 13.209 | 10, 876 | 4,874 | 15,749 | 13,380 | 8,691 | 20,071 |
| France. <br> Germsny. Federal Republic | 45,279 | 12,891 | 58, 170 | 54, 879 | 13,808 | 68,687 | 79,064 | 17,039 | 96, 103 |
|  | 118,537 | 25,486 | 144.023 | 135, 43 | 34.956 | 170,382 | 162,355 | 47,162 | 209,517 |
| Italy...................... | 49,494 | 5,809 | 55, 303 | 60.976 | 6. 486 | 67,462 | 72,089 | 8,190 | 80,278 |
| Netherlands. .......... | 27, 268 | 9,468 | 36,736 | 30.417 | 9,516 | 39,933 | 42,833 | 13,441 | 56.274 |
| Norway | 5.359 | 18.133 | 23,492 | 8,045 | 21,290 | 27,335 | 9,642 | 23.999 | 33,841 |
| Spain <br> Sweden <br> Switzerland | 4.035 | 4,460. | 8.496 | 5,375 | 6.329 | 11,704 | 6, 448 | 6.830 | 13,280 |
|  | 24,646 | 8.764 | 33.410 | 28, 775 | 10.719 | 38,794 | 36,935 | 18,634 | 55,568 |
|  | 25,202, | 7,267 | 32,469. | 27,303 | 9,630 | 36,932 | 32,738 | 11.248 | 43.986 |
| Eastern Europe........ Czechoslovakia Poland. | 13,315 | 2,794 | 22,109 | 26,697 | 3,269 | 29,366 | 35, 197 | 9,344 | 4,541 |
|  | 8,828 | 376 | 9.204 | 12,019 | 828 | 12,847 | 15,097 | 888 | 15.265 |
|  | 6,416 | 372 | 6.788 | 9.117 | 164 | 9,280 | 11,320 | 486 | 11,815 |
| Middie East Qatar. | 4,385 | 112,175 | 116,511 | 4,6¢0 | 72,530 | 77,191 | 5,242 | 98,255 | 104,498 |
|  | - | 8,678 | 8.67 |  | 2,285 | 2.285 |  | 2,732 | 2,732 |
| Iran. <br> Iraq. <br> Israel. <br> Kuwait <br> Saudi Arabia. | 153 | 42, 646 | 42,799 | 228 | 30,857 | 31,085 | 630 | 31,135 | 31,765 |
|  | 2954 | 1,178 | 1,269 | 129 | 2.250 | 2,379 | 82 | 5,202 | 5.28 |
|  | 2,954 | 3,089 <br> 5 <br> 169 | ${ }^{6} .043$ | 3.238 | 3.032 | 6.270 | 2,164 | 8.491 | 6,656 |
|  |  | 5,169 50.290 | 5,1699 |  | 11,217 | 11,219 |  | [1, 498 | 11,505 |
|  |  | 50.290 | 30,290 |  | 18,552 | 18,558 | 1 | 42,113 | 42,114 |

${ }^{1}$ Less than $\$ 500$.
7.-Values of Dutlable and Free Imports, by Geographic Reglon and Leading Countries, 1963-65-concluded

| Region and Country | 1963 |  |  | 1964 |  |  | 1985 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Dutiable | Free | Total | Dutiable | Free | Total | Dutiable | Free | Total |
|  | \$'000 | \$'000 | \$000 | \$ 000 | \$'000 | \$000 | $8{ }^{\prime} 000$ | \$'000 | \$'000 |
| Other Africa | 40,531 | 46,146 | 86,667 | 38,050 | 58,558 | 96,648 | 27,90? | 58,574 | 8\&,431 |
| Ghana. | 1.959 | 4.574 | 6,533 | 2,283 | 5,678 | 7.981 | 3,485 | 6,693 | 10.158 |
| Kenya | 103 | 3,220 | 5.323 | 78 | 7,319, | 7,397 | 62 | 6,801 | 6,882 |
| Mauritios and Dependencies | 8.606 |  | 8,606 | 13,008 | 385 | 13,394 | 6,389 | 67 | 6.456 |
| Nigeris........ | 8,603 | 4,320 | 7,924 | 3,588 | 7,676 | 11,264 | 2,681 | 8.571 | 11.252 |
| Republic of South | 18,054 | 13,494 | 31,548 | 13,709 | 15,068 | 28,777 | 10,815 | 13,188 | 27,113 |
| Tanganyik |  | 7,284 | 7.315 |  | 9,009 | 9,061 | 10.815 | 16,188 | 27,113 |
| Tanzania, | \% |  |  |  |  |  | 86 | 6,820 | 6,907 |
| Other Asia | 177,147 | \$0,405 | 267,552 | 219,899 | 94,546 | 314,405 | 289,067 | 107,770 | 396,857 |
| Ceylon | 587 | 14,055 | 14,642 | ${ }^{666}$ | 12.747 | 13,413 | 780 | 13+256 | 14,036 |
| Hong Kong | 20,606 | ${ }^{5} 592$ | 21,197 | 25,341 | 980 | 26.321 | 30.091 | 1. 102 | 31, 194 |
| India. | 25.712 | 26,952 | 52,664 | 9,867 | 26,254 | 36, 121 | 15, 120 | 28,305 | 43,424 |
| Malaysis | 2,450 | 29,004 | 31, 454 | 2.824 | 31,742 | 34,566 | 2,617 | 37.858 | 40,272 |
| China, Communist | 2.018 | 3, 129 | 5,147 | 5.080 | 4,390 | 9,420 | 8.638 | 5.805 | 14,444 |
| Japan.. | 117,093 | 12,478 | 130,471 | 100,974 | 13,414 | 174,388 | 213,570 | 16,634 | 230,204 |
| Taiwan (Republic of Cbins) | 5,585 | 290 | 5,875 | 8,772 | 291 | 8,063 | 8,898 | 435 | 9,333 |
| Oreania. | 49, 068 | 29,770 | 78,388 | 45,244 | 35,652 | 84,896 | 30,572 | 41,646 | 72,218 |
| Austral | 33,621 | 22,029 | 55,650 | 33, 167 | 26,860 | 59.827 | 21,088 | 26,230 | 47,317 |
| Fiji. | 8.572 | 16 | 8,588 | 7,391. | 10 | 7,401 | 4,787 | 14 | 4,801 |
| New Zealand | 6,847 | 7,219 | 14,067 | 4,650 | 9,426, | 14,076 | 4,560 | 10,310 | 14,870 |
| South America | 85,127 | 265,586 | 350,714 | 100,371 | 293,946 | 354,317 | 183,114 | 261,718 | 364,832 |
| British Guiana | 16,431 | 14,904: | 31,334 | 18,136 | 17,516 | 35,653 | 6.376 | 16, 173 | 22,549 |
| Brazil | 20,669 | 15,692 | 36,361 | 25,214 | 14,319 | 39,583 | 22,250 | 13,323 | 35,573 |
| Colowbi | 10,457 | 3.119 | 13,576 | 13,013 | 1,876 | 14,888 | 14.019 | 2.793 | 18, 812 |
| Ecuador | 7.496 | 129 | 7,625 | 9.273 |  | 9,353 | 8,140 | 406 | 8.546 |
| Venezuel | 23.019 | 220,477 | 243,495 | 27.552 | 243,070 | 270,621 | 46.245 | 208,425 | 284,670 |
| Central America and Antilles. Jamaica Trinidad and Tobago.. | 117,988 | 67, $\mathbf{H z}^{\text {a }}$ | 184,985 | 124,235 | 65,785 | 186,070 | 121,196 | 61,980 | 183,185 |
|  | 16,543 | 34,981 | 51,524 | 16,193 | 31, 665 | 47, 858 | 6,729 | 29.271 | 38,000 |
|  | 6,227 | 9,644 | 15,871 | 9.487 | 11,251 | 20.738 | 6,436 | 10,234 | 16.670 |
| Costs Rica | 7,118 | 190 | 7.308 | 8,385 | 38 | 8,363 | 6,518 | 197 | 6,715 |
| Honduras | 6,698 | 170 | 6,868 | 7,435 | 235 | 7,670 | 9,994 | 199 | 10,193 |
| Mexico. | 9,267 | 14.467 | 23,734 | 9,842 | 13,244 | 23,186 | 11.694 | 15.553 | 27,247 |
| Netherlands Antilles | 35,793 | 207 | 35, 999 | 34,795 | 91 | 34,886 | 43.072 | 268 | 43,341 |
| Panama. | 11,017 | 39 | 11,057 | 15,058 | 37 | 15,095 | 19,378 | 36 | 19,414 |
| North America. $\qquad$ <br> United States. $\qquad$ <br> Totals, Commonwealth and Preferential Countries.... | 2,472,351 | 1,872,385 | ,444,748 | 2,878,071 | 2,335,614 | 5,164,685 | 2,962,499 | \$,482,682 | 6,045,181 |
|  | 2, 472,340 | 1,972,216 | $4,444,558$ | 2,828,941 | 2,335,344 | 3,164,285 | 2,962.478 | 3,082,627 | 6,045,105 |
|  | 387,800. | 529,830 | 927,680 | 336,112 | 583,733 | 979,845 | 384,83\% | 607,152 | 391,883 |
| Totals, Other Countries. | 3,144,786 | 2,485,843 | 5, 638,585 | 3,638,790 | 2,865,072 | 6,507,862 | 3,481,265 | 3,654, 183 | 7,411,44 |
| Grand Totals, Imports....... | 3,512,585 | 3,015,473 | 6,558,209. | 1,034,903 | 3,452,804 | 7,487,707 | 1,366,056 | 4,267,334 | 8,633,434 |

: See Tanzania. $\quad$ Formerly Tanganyika.

## Section 4.-Trade by Commodity

This Section provides detailed information on the composition of Canada's exports and imports for 1964 and 1965. Table 8 shows exports and re-exports to and imports from all countries, Britain and the United States, classified by section; Table 9 gives detailed statistics of all commodities of any importance exported from Canada to all countries, to Britain and to the United States; and detailed statistics for imports into Canada by section and commodity appear in Table 10.

## 8.-Grports to and Imports from All Countries, Britain and the United States, by Section, 1964 and 1365

(Millions of dollars)

| Section | Domestic Exports |  | Re-exports |  | Imports |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1964 r | 1965 | 1964 | 1965 | $1964 \times$ | 1965 |
| All Countries. | 8,054.2 | 8,595.1 | 209.2 | 241.6 | 7,487.7 | 8,633.4 |
| Live animals. | 34.5 | 79.1 | 0.1 | 0.1 | 17.1 | 10.8 |
| Food, feed, beverages and tobacco | 1,805.9 | 1,629.8 | 8.4 | 10.5 | 777.6 | 758.8 |
| Crude materials, jnedible | 1,616.1 | 1,763.7 | 6.3 | 8.3 | 960.7 | 1,006.3 |
| Fabricated materials, inedib | 3,502.5 | 3,728.8 | 56.9 | 57.0 | 1,813.0 | 2,114.4 |
| Ead products, inedible. | 1.109.0 | 1,300.1 | 134.6 | 160.2 | 3,701.2 | 4,476.6 |
| Special tranesctions-tra | 26.2 | 23.5 | 2.9 | 5.5 | 218.1 | 266.5 |
| Britain. | 1,199.8 | 1,174.3 | 7.3 | 11.0 | 574.0 | 619.1 |
| Live animals. |  | 0.1 |  |  | 0.4 | 0.1 |
| Food, feed, beverages and tobacco | 311.7 | 302.3 | 0.5 | 0.7 | 34.8 | 40.3 |
| Crude materials, inedible. | 236.4 | 256.3 | 0.6 | 0.2 | 37.3 | 37.0 |
| Fabricated materials, inedi | 602.8 | 567.5 | 1.4 | 1.8 | 180.3 | 189.9 |
| End products, inedible. | 48.6 | 47.7 | 4.8 | 8.3 | 313.3 | 342.7 |
| Special transactiong-trade | 0.5 | 0.5 | -- | -. | 7.8 | 8.0 |
| United States. | 4,271.1 | 4,840.5 | 165.9 | 192.3 | 5,164.3 | ©,045.1 |
| Live animala. | 30.1 | 72.0 |  | 0.1 | 16,4 | 10.2 |
| Food, feed, beversges and tobacco. | 362.0 | 408.9 | 6.9 | 7.3 | 356.1 | 374.5 |
| Crude materials, inedible. | 978.6 | 1,012,1 | 4.6 | 6.7 | 443.0 | 490.8 |
| Fsbricsted materisk, ime | 2,237.2 | 2.481.7 | 52.5 | 51.5 | 1,197.1 | 1,350.2 |
| End products, inedible. | 643.0 | 847.5 | 99.4 | 121.4 | 2,954.8 | 3,578.6 |
| Special transactions-trade | 20.1 | 18.3 | 2.5 | 3.4 | 196.9 | 240.8 |

9.-Domestic Exports from Canada to All Countries, to Britain and to the United States, by Section and Commodity, 1964 and 1965

| Section and Commodity | All Countries |  | Britain |  | United Statea |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 10645 | 1965 | 1964 | 1965 | 1964 | 1965 |
|  | \$'000 | \$'000 | $8{ }^{\prime} 000$ | \$000 | \$000 | \$ 000 |
| Live Animals. | 34,514 | 78,133 | 42 | 79 | 3t,115 | 72,008 |
| Feod, Feed, Beverages and Tobaceo. | 1,505,886 | 1,629,818 | 311,721 | 302,305 | 361,969 | 408.917 |
| Mest, frest, chilled or frozen. | 36,065 | 59,542 | 3.930 | 4,865 | 27,657 | 47.680 |
| Other meat and meat preparatious | 15,633 | 18,652 | 542 | 417 | 9,296 | 10.205 |
| Fish, whole or dressed, fresh or frozen. | 41,501 | 44,239 | 4, 164 | $4+263$ | 32,102 | 34,265 |
| Fish, fillete and blocks, fresh or frozen.. | 52,861 | 65,135 | 2.422 | 1.073 | 50,046 | 62,909 |
| Figh, preserved, except canned........... | 25,528 | 23,444 | 81 | 49 | 6,212 | 6,540 |
| Fieb, canned............................... | 31,851 | 24,695 | 15,534 | 11,006 | . 382 | 420 |
| Sbellish. | 34,640 | 39.186 | 9588 | 1.199 | 31,625 | 36,260 |
| Dairy produce, egge and honey........... | 60,385 | 43,548 | 26,541 | 14,264 | 1,331 | 1, 422 |
| Barley | 51,254 | 43,679 | 10,657 | 13,189 | 11,070 | 8.393 |
| Wheat. | 1,023,516 | 840.175 | 177,428 | J40,383 | 7,828 | 1,525 |
| Other cereals, unmille | 22,677 | 26,534 | 1,178 | 1,870 | 6,217 | 6.533 |
| Wheat flour | 100,255 | 66,305 | 21,692 | 19,482 | 1,342 | 1,708 |
| Other cereals, mil | 10.989 | 8,898 | 4 | 1,314 | 4,306 | 1,724 |
| Cereal preparations. | 6,889 | 8,058 | 517 | 337 | S,567 | 6,817 |
| Fruita and fruit preparations. . . . . . . . . . | 21,636 | 20,093 | 7,042 | 6.859 | 11.346 | 9,636 |
| Vegetables sund vegetable preparations. | 30, 943 | 41,889 | 9,958 | 13,582 | 9,969 | 13.917 |
| Sugar and sugar preparations........... | 11.310 | 12,661 | 778 | , 202 | 7,296 | 9,370 |
| Other foods and materials for loods..... | 19,698 | 18,910 | 3.123 | 3,690 | 9,085 | 7,894 |
| Oil seed cake and meal. | 22,409 | 26,434 | 20,918 | 25,435 | 68 | 110 |
| Other feeds of vegetable origi | 22,082 | 21,276 | 1,504 | 1,732 | 17,549 | 15,248 |
| Other lodder a | 18.107 | 21,398 | 4,012 | 5.854 | 10,094 | 10.550 |
| Whisky | 102,820 | 118,983 | 305 | 465 | 96, 876 | 110.558 |
| Other beverag | 4.493 | 4,724 |  | 13 | 4,371 | 4,539 |
| Tobacco. | 38,365 | 35,383 | 28,627 | 30,761 | ${ }^{3} 32$ | 646 |
| Crude Materials, Inedjble. | 1, 616,145 | 1,769,701 | 236,357 | 256,290 | 978, 836 | 1,012,693 |
| Raw hides and akins. | 14.913 | 22,676 | 1,189 | 1,533 | 3.642 | 5.418 |
| Fur skins, undressed | 30,328 | 30.305 | 7,414 | 6,686 | 16,874 | 17.669 |
| Other crude animal products............. | 6,583 12,768 | 10.963 13.720 | 761 8.738 | 1,426 | 5.327 7.391 | 8,772 |
| Seeds for sowing. . . . . . . . . . . . . . . . . . . . . . . . . . | 12,768 48,662 | 13,720 81,658 | 2,738 16,299 | 1,578 16,261 | 7,391 | $6,858$ |

[^317]
## 9.-Domestic Exports from Canada to All Countries, to Britain and to the United States, by Section and Commodity, 1964 and 1565-continued

| Section and Commodity | All Countriea |  | Britain |  | United Statee |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $1964{ }^{\text {r }}$ | 1965 | 1964 | 1965 | 1964 | 1965 |
|  | \$'000 | 8'000 | \$'000 | \$000 | \$ 000 | \$ 000 |
| Crude Materials, Inedlble-concluded |  |  |  |  |  |  |
| Rapeseed............................. | 10,152 | 30,900 | 265 | 1,057 | 340 | ${ }^{18}$ |
| Other oil seeds, oil nuts and oil kernels.. | 9,484 | 15,962 | 5.761 | 9,558 | 12,481 | 2,075 |
| Other crude vegetable products. ......... | 13,233 36,824 | 14,053 40,819 | 2,777 | 173 3,098 | 12,472 <br> 23,225 | 12,908 |
| Other crude wood mater | 18, 162 | 18.511 | 675 | . 908 | 13,369 | 13,244 |
| Textile and related 6bres. | 11,394 | 15,250 | 845 | 1,154 | 4,942 | 7,218 |
| Iron ores and concentrates | 356,007 | 360,819 | 35,714 | 31,803 | 293,400 | 285,062 |
| Scrsp iron and steel. | 20.598 | 8.265 | 369 |  | 8,365 | 6,611 |
| Aluminum ores, concentrates and scrap.. | 8,679 | 11,529 | 287 | 107 | 3.048 | 4,995 |
| Copper in ores, concentrates and scrap... | 65,578 | 77, 831 | 884 | 2,840 | 8,326 | 9.589 |
| Lead in ores, concentrates and scrap.... | 15.341 | 22,946 189 | 1,532 | \%,224 | 5,383 | 9,754 |
| Nickel it ores, concentrates and serap.... 166,036 189,336 81,396 87,610 34,524 39,582 <br> Precious metals in ores, concentrstes and       |  |  |  |  |  |  |
| acrap........................ | 34,394 | 47,428 | 20,625 | 27,533 | 8.961 | 11,454 |
|  | 54,776 | 69,849 | 1,384 | 1,910 | 20,259 | 31,093 |
|  | 74,653 | 53,698 | 38,627 | 38,948 | 34,863 | 14.749 |
| Radjoactive ores and concentrates. . . . . Other metals in ores, concentrates and scrap | 7,383 | 20,873 | 1,235 | 6,086 | 2,400 | 4,598 |
| Crude petroleum......................... | 262.023 | 279,956 |  | - | 262,023 | 279,956 |
| Nstural gas <br> Coal and other crude bituminous substances | 97,609 | 104,280 | - |  | 97,609 | 104,2.80 |
|  | 12,836 | 13,045 | 1 |  | 3,460 | 2,368 |
|  | 155,706 | 158.657 | 11,782 | 11,865 | 62,996 | 65,195 |
| Sulphur | 20,404 | 27,470 | 406 |  | 8,833 | 10,215 |
| Other crude non-metallic minerals | 42,170 | 43,788 | 1,812 | 1,590 | 22,926 | 28,683 |
| Other waste and scrap materials. . | 9,458 | 9,614 | 433 | 315 | 11,717 | 6,597 |
| Fabricated Materials, Inedible.......... | $\begin{array}{r} 3,502,496 \\ 9,682 \end{array}$ | 3,728,769 | 602,570 | 567,484 | 2,3\%7,219 | 2,481,638 |
| Leather and leather fabricated materials |  | 8,742 | 2,821 | 1.297 | 8,684 | 5,465 |
|  | 27,614 | 457,967 | 77,773 | 77, 286 | 313754 | 314,568 |
| Lumber, hardwood |  | 31,967 | 3,069 | 2,946 | 23,512 | 28,408 |
| Shingles and shakes | 31,945 | 30,063 | 288 | 178 | 31,345 | 29,638 |
| Other sawmill produ | 5,541 | 5. 428 | 590 | 613 | 4,855 | 4,680 |
| Veneer | 28,811 | 31.580 | 17 | ${ }^{2} 2{ }^{4} 5$ | 26.290 |  |
| Plywood.. | 37,850 | 37,510 | 27,195 | 25,249 1.804 | 7,566 4,871 | 7,112 |
| Other wood fabricated materia | 7,246 460,854 | 7,663 493,501 | 1,628 38.464 | 1,804 40.404 | 4,871 348,017 | 371,429 |
| Wood pulp and similar pulp | 834,646 | 493,501 869,586 | 33,464 81,791 | 40,404 4692 | 348,017 689,406 | -371, 728 |
| Other paper for prin | $12,403$ | 16,354 | 2,263 | 2,391 | 8,885 | 12.821 |
| Paperboard |  | 21,300 | 15,697 | 16,491 | 2,043 | 1,227 |
| Other paper | 30,334 | 30,804 | 10.937 | 7,780 | 9.159 | 12,091 |
| Yarn, thread, cordage, twine and rope... | 13,176 | 16, 158 | 1,035 | 1, 103 | 8,442 | 11,821 |
| Broad woven fabrics. | 14,207 | 16,630 | 8,512 | 7.974 | ${ }^{803}$ | 3,433 3,008 |
| Other textile fabricated materialy, | 12,160 | 16.113 | 1,779 | 1,690 | 1,788 | 3,008 2,047 |
| Oils, [ats, waxes, extracts and derivatives | $21,544$ | 104,319 8 8 | 11,982 | 12,130 1,839 | 2,270 3,918 | 5,018 |
| Chemical elements......l. | 31.269 | -85,907 | 5,901 | 6,918 | 17,311 | 18,922 |
| Other inorgamic chemi | 48,244 | 55,172 | 14,889 | 14,425 | 22,193 | 29,636 |
| Fertilizers and fertilizer materials, | 88.750 | 111,831 | ${ }^{1} \cdot 10$ | 11 | 67,757 | 95,598 |
| Syntbetic rubber and plastics materisis. | 98,723 | 87, 885 | 21,778 | 18,888 | 13,410 | 17,687 |
| Plastics, basic shapes and forms......... | 13,012 | 12,897 | 2,312 | 1,095 | 1,495 | 1,442 |
| Other chemical producta..... | 9,605 | 10,302 | 723 | 1,517 | 4.465 | 5,065 |
| Petroleum and coal products. | $24,864$ | 22,572 | ${ }^{596}$ | 1528 3.770 | 20.348 1.149 | 20,630 1,544 |
| Ferro-alloya.. | 76, 410 | 65, 901 | 3,03 13.459 | ${ }^{+} 787$ | 58,513 | 57,445 |
| Primary iron and steel. |  | 65, 51.21 | 13,465 | 38 | 21,975 | 28,125 |
| Bars end rods, ateel..... | 14,549 | 16,144 | 1, 852 | 2,934 | 9.810 | 9,476 |
| Plate, sheet and strip, steel | 71.708 | 78,140 | 7,993 | 3,418 | 33.317 | 45,888 |
| Rails and railway track material, steel.. | $21,634$ | 11,600 |  |  | 10.923 | 11.914 |
| Other iron and ateel and alloys. | 317,937 | 360,965 | 98,171 | 97.835 | 118,898 | 162,124 |
| Aluminum, inctuding alloys. | 190,36322,496 | 194,850 | 76,119 | 81,489 | 69,564 | 69,497 |
| Lead, including allo |  | 41, 243 | 9,245 | 19,819 | 7,851 | 9,953 |
| Nickel and alloys. | 197, 145 | 207, 864 | 38,835 | 22,391 | 140,888 | 167.188 |
| Precious metala, including alloys | 14,91462,345 | 17,589 | 10 | 20 | 14,694 | 17.500 |
| Zine, including alloys. |  | 71,588 | 25.846 | 29.092 | 20,749 | 26,369 |
| Other pon-ferrous metals and allo | 15,563 | 14,670 | 5,501 | 2, 812 | ${ }_{23,763}$ | 28,359 |
| Metal fabricated basic producta. |  | 43,039 | 2,232 | 2,812 | 23,763 | 28,359 |

[^318]
## 9.-Domestic Enports from Canada to All Countries, to Britain and to the United States, by Section and Commodity, 1964 and 1965-concluded

| Section and Commodity | All Countries |  | Britain |  | United States |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1964 r | 1965 | 1884 | 1985 | 1884 | 1965 |
|  | \$ 000 | \$000 | \$000 | \$'000 | \%'000 | \$ 000 |
| Fabricated Materlals, Inedible-concl. |  |  |  |  |  |  |
| Abrasive basjic producta Other non-metailic mineral basic products Flectricity. Other Jabricated materials, inedible. | 29,784 18,262 | 34,246 22.537 | 2,884 | 3,412 | 25.983 13.356 | 29,803 16,409 |
|  | 18,003 | 15,492 | 1,30 |  | 18,603 | 15,492 |
|  | 13,179 | 14,132 | 1,217 | 1,408 | 5,328 | 6,626 |
| End Products, Inedlble General parpofe industrial machinery Materiala handling machinery and equipment. <br> Drilling, excavating, mining machinery Metalworking machinery Construction macbinery and equipment. Plastics industry machinery and equipment. | 1,143, \%6 | 1,309,145 | 48,586 | 47,693 | 642,975 | 847,472 |
|  | 37,246 | 41,287 | 1,511 | 2.114 | 13,006 | 19,300 |
|  | 13,499 | 21,342 | 109 | 232 | 10,046 | 16,795 |
|  | 14,928 | 24,193 | 671 | 447 | 5,137 | 9,224 |
|  | 8,967 | 12,571 | 730 | 1,048 | 6,055 | 7,952 |
|  | 6,588 | 9,678 | 891 | 326 | 3,863 | 7,089 |
|  | 8,683 | 11,829 | 426 | 611 | 8,110 | 10,677 |
| Woodworking machivery and equipment Pulp and paper induatries machinery. Other special industry mschinery. Soil preparation, seeding, fertilizing mscbinery. $\qquad$ | 10,784 | 11,760 | 832 | 810 | 3,872 | 4,762 |
|  | 13,230 | 8,413 | 373 | 737 | 4,218 | 4.238 |
|  | 21,705 | 19,397 | 2,274 | 1,939 | 10,846 | 11,795 |
|  | 24,577 | 22,618 | 62 | 243 | 23,449 | 21,273 |
| Combine reaper-threshers and parts. <br> Other haying and harvesting machinery. Other agricultural machinery and equipment | 67,376 | 85,657 | 1,696 | 1,351 | 61,629 | 73,693 |
|  | 31,587 | 30,469 | 28 | 43 | 28,987 | 28,948 |
|  | 7,735 | 10,871 | 129 | 203 | 6,282 | 0,114 |
| Tractors............................. | 9,387 | 12,216 | 406 | 195 | 7,303 | 10.939 |
| Railway and street railway rolling-stock | 28,860 | 7,586 |  |  | 524 | 1.330 |
|  | 67,667 | 148,643 | 1,910 | 1,197 | 20,822 | 66.216 |
|  | 14,474 | 34, 530 | 34 | 71 | 5,526 | 24,353 |
|  | 31,288 | 44,358 | 372 | 588 | 25,330 | 41,979 |
| Motor vehicle engipes and parte.........Motor vehicle parts, except engines.....Ships and boats................... | 63,959 | 128,444 | 327 | 1,851 | 45,108 | 98,703 |
|  | 20,709 | 17,712 | 935 | 1,230 | 9,976 | 10,988 |
| Aircraft, complete with engines. . . . . . . | 152,134 | 105,266 |  |  | 116,898 | 81,374 |
| Aircraft engines and parts................ | 43,684 | 48,521 | 309 | 867 | 33,321 | 37,849 |
|  | 52,986 | 53,250 | 474 | 467 | 38,223 | 44,728 |
| Other vehicles. | 8.405 | 3,151 |  | 28 | 3,273 | 3,038 |
| Rubber tires and tubes. | 8,262 | 7,470 | 11 | 45 | 3,573 | 2,444 |
| Communication end related equpment.. | 51,907 | 70.769 | 1,641 | 1.601 | 33,734 | 48,511 |
|  | 15, 165 | 16,614 | 5,254 | 4,982 | 5,983 | 7,262 |
| Cooking equipment for food <br> Electric lighting and distribution equipment. | 3,367 | 3,994 | 2,169 | 2,590 | 402 | 708 |
|  | 21,174 | 24, 270 | 1,183 | 1,923 | 6,525 | 10.647 |
| Navigation equipment and parts. Other measuring, controlling, laborstory, | 81,221 | 49,922 | 222 | 171 | 22,111 | 29,858 |
| medical and optical equipment. | 21,175 | 19,860 | 1,549 | 1,858 | 11,148 | 11,436 |
|  | 7,492 | 8.738 | 1,147 | 1,071 | 1,514 | 1,656 |
| Hindice mashines and equipument......... | 37,005 | 32,288 | 3.107 | 1,457 | 7,770 | 10,610 |
| Other equipment and tools...............Apparel and apparel accesorieg........ | 16,150 | 19,196 | 2,820 | 2,784 | 6,155 | 8,647 |
|  | 20,890 | 23,937 | 4,939 | 3,399 | 6,926 | 10,145 |
| Footwear. | 5,371 | 4,902 | 952 | 317 | 3,158 | 3,597 |
| Toys, games, sporting, recreation equipment. Other personal and hoouehold goods. | 9,875 | 9,661 | 1,057 | 1,130 | 5,611 |  |
|  | 15,167 | 13,924 | 2,877 | 2,776 | 4,466 | 3,577 |
| Medicinal and pharmaceutical products. | 11,110 | 12,643 | $3 \mathrm{B1}$ | 404 | 1, 128 | 1,488 |
| Medical, ophtnalmic, arthopaedio supplies. |  |  |  |  |  |  |
|  | 2.039 | 1,992 | 69 | 106 | 798 | 786 |
| Printed matter........................................ | 10,019 | 10,629 | 677 | 702 | 7,523 | 7.971 |
|  | 6,288 | 8.963 | 438 | 596 | 2,754 | 5.247 |
| Firearma, ammunition and ordnance.... | 8.743 | 11.369 | 795 | 870 | 6,152 | 7,534 |
| Crefabricated buildings and structures.... | \%,510 | 7.791 | 342 | 308 | 2,537 | 4,139 |
|  | 11,295 14,318 | 8,399 | $\stackrel{287}{ }$ | . 258 | \$, 170 | 5.701 |
| Other end producte. ..................... | 14,318 | 17,952 | 2,387 | 1,951 | 7,852 | 12,884 |
| Special Transactiens-Trade. Shipments valued at less than $\$ 100$ each. Other apecial transactions-trade........ | 20,171 | 23,512 | 503 | 487 | 20.116 | 18,307 |
|  | 16,274 | 16,024 | 484 | 458 | 12,798 | 12,582 |
|  | 9.897 | 7,488 | 40 | 29 | 7,318 | 5,725 |
| Totals, Erports. . . . . . . . . . . . . . . . . . . . | 8,054,219 | 8,525, \%88 | 1,198,779 | 1,174,30\% | 4,271,059 | 4,840,456 |

[^319]
## 10.-Imports Into Canada for Consumption from All Countries, from Britain and from the United States, by Section and Commodity, 1964 and 1965

| Section and Commodity | All Countries |  | Britain |  | United States |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1964 | 1965 | 1964 | 1965 | 1964 | 1965 |
|  | $\$^{\prime} 000$ | \$000 | \$000 | \$000 | \$000 | \$ 000 |
| ISve Anlmak. . . . . . . . . . . . . . . . . . . . . . . . | 17,124 | 10,80t | 432 | 125 | 18,365 | 14,216 |
| Food, Feed, Beverages and Tobacco Mest, fresh, cbilled or frozen. . Other meat and meat preparations Fish and marine animals | 77\%,598 | 758,836 | 34,817 | 40,380 | 356,071 | 374,567 |
|  | 33, 344 | 28,539 | 17 | 3.862 | 19,963 | 11,960 |
|  | 13,582 | 15, 122 | 293 | 278 | 8.163 | 9,134 |
|  | 21,753 | 26,421 | 383 270 | 399 481 | 9,709 8,014 | 13,893 |
| Dairy produce, eges and honey. Indian corn, shelled. | 13,128 3024 | 18, 789 | 250 | 481 | 30.024 | 7,924 |
| Indian corn, shelled,...................Otier cereale and cereal preparations....Banans and plantains, fresh............Grapes, fresh. | 24,055 | 28,256 | 4,006 | 4,108 | 17,592 | 19,957 |
|  | 31,187 | 31,446 |  |  | 11 | 10 |
|  | 18,364 | 19,987 | $t$ | 3 | 17,285 | 18,764 |
| Oranges, mandarins and tangerines, fresh. | 29,953 | 29,564 | 4 | 1 | 22,785 | 23,118 |
|  | 34,892 | 38,237 |  | - | 32,237 | 35,672 |
| Other fresh fruits and berries Fruits, dried or dehydrated. | 16,548 | 16,551 | 2 | 14 | 7.142 | 7,000 |
| Orange juice and concentrates Other fruit juices and concentrates. | 22,085 | 15,270 | 35 | 12 | 15,076 | 12.419 |
|  | 7,843 | 7,188 | 80 | 106 | 6, 881 | 6,270 |
| Other fruit juices and concentrates........ Fruits and products, canned | 24,337 | 27,446 | 1,101 | 914 | 12,500 | 14.409 |
| Other fruits and Iruit preparations........ | 8,690 | 11,503 | 49 | 115 | 2,236 | 2,913 |
| Nuts, except oil nuts..................... | 14, 604 | 16,189 | 106 | 179 | 4,919 | 5,954 |
| Tomatoes, fresh. <br> Other fresh vegetables. <br> Other vegetsbles and vegetable preparations. | 16.342 | 17,665 |  |  | 11,625 | 11, 831 |
|  | 43,763 | 49,972 | 3 | 1 | 42,488 | 48,498 |
|  | 20,203 | 23.158 | 565 | 496 | 12,770 | 13,869 |
|  | 10¢,869 | 55,079 |  |  |  |  |
| Raw sugar................ ........... | 8,198 | 5.701 | 268 | 249 | 2,171 | 1,711 |
| Sugar preparations and confectionery.... | 15,033 | 15,851 | 7,207 | 7,042 | 4,337 | 5,050 |
| Cocoa and cbocolate..................... | 20,578 | 19,957 | 2,422 | 2,010 | 875 | ${ }^{777}$ |
|  | 82,620 | 78,692 | 75 | 408 | 18,868 | 16, 146 |
| Tea. | 26,039 | 25,617 | 4,089 | 3,561 | 718 | 651 |
| Other foods and materials for coods | 33,133 | 36,310 | 1,141 | 1,201 | 21,032 | 22,722 |
| Oil seed cake and meal....... | 17,676 | 21,075 | 97 |  | 17, 875 | 21,074 |
| Other fodder and feed..................... | 4,398 $\mathbf{2 0 , 0 8 6}$ | 22,308 | 10,915 | 12,941 | 1,382 | 1,331 |
| Other beverages.............. | 12,908 | 15, 114 | 1,181 | 1,811 | 1,010 | 1,688 |
| Tobacco.................................. | 10,261 | 10,751 | 511 | 497 | 6,018 | 6,851 |
| Crude Materials, Inedible. . . . . . . . . . . . . | 960, 605 | 1,046, 274 | 37,304 | 36,395 | 44,025 | 490.848 |
| Fur akins, undressed. ............ | 19,772 | 20.728 | 3,196 | 3,231 | 8,793 | 9, 339 |
| Other crude sammal products.............. | 12,903 | 13,424 | 1,058 | 795 | 9.753 | 10.673 |
| Soya beans.. ${ }^{\text {Othe }}$ - ${ }^{\text {al seeds, } \text { oil nuts and oil }}$ | 52.899 | 46,327 |  |  | 52.896 | 46, 334 |
|  | 10,702 | 14,490 | 22 | 4 | 5.810 |  |
| Rubber sund allied gums, natural......... | 22,699 | 21, 789 | -19 | 204 | 2,298 14,852 | 15,247 |
| Other crude vegetable products. Crude wood materials. | 20,509 22.376 | 21,481 29,400 | 252 | 204 | 14,852 | 18, |
|  | 22,376 44,944 | 29,400 40,358 | 25,206 | 23,372 | 22,087 3,848 | 29,639 |
| Wool and fine animal hair | 65,297 | 68,454 | , 27 | 23.34 | 62,043 | 53,363 |
| Synthetic fibres. | 12,183 | 14,514 | 3.644 | 5,171 | 7,683 | 8.034 |
| Other tertile fibres. | 17,487 | 11,443 | 107 | 31 | 707 | 599 |
| Irou ores and concentrates. . . . . . . . . . . . | 67,287 | 60.550 | - | $\cdots$ | 63,488 | 58,130 |
|  | 27,438 | 36.111 | 25 | ${ }^{2}$ | 27,319 | 36,060 |
| Aluminum ores, concentrates and scrap.. | 70, 424 | 69,871 29.135 | + 25 | 1,748 | ${ }_{6,431}$ | 15,725 |
| Other metals in ores, concentrates, serap Cosl | 24,475 88,472 | 29,135 126,200 | 1,577 | 1,102 | 86,360 | 126,098 |
| Crude petroleum...................... | 320.637 | 312.259 | - |  |  |  |
| Other crude bituminous substances...... Abrasives natural | 3,51] | 6,208 | 158 |  | 3,323 | 6, 166 |
|  | 8.549 | 8,528 | 643 | 530 | 7,404 | 7.144 |
| Phosplate rock... | 11,719 | 13, 891 |  |  | 12, 1800 | 124,772 |
| Other crude non-metallic minerals. ...... Other waste and scrap materials. | 119,074 9,303 |  | 1,000 | 1,272 | 8,767 | 8,961 |
|  | 9,303 | 9,835 | 258 | 4.6 |  |  |
| Fabricated Materiaks, Inedible. . . . . . . . . | 1,812,988 | 2,114,483 | 180,381 | 189,933 | 1,157,118 | 1,350,165 |
| Leather and leather fabricated materials | 15,039 | 17,256 | 6,279 | 7,087 | 7,025 | 7.709 |
|  | 26,912 | 26,074 | 1,770 | 2,077 | 22,511 |  |
| Lumber................................. | 37,841 | 38,815 | 19 | 16 | 33,723 | 23,800 |
| Veneer, plywoed and wood building boards. | $\begin{aligned} & 20,511 \\ & 31 \end{aligned}$ | 19,612 | 106 | 167 | 6,268 | 7,121 |
| Other wod sibricated materials........ |  | 12,011 | 164 | 212 | 9,041 | 9,971 |
|  | $\begin{aligned} & \mathbf{1 1 , 1 3 1} \\ & 11,333 \end{aligned}$ | 14,137 | 16 | 13 | 10,001 | 12,171 |

[^320]
## 10.--Kmports into Canada for Consumption from All Countries, from Britain and from the United States, by Section and Commodity, 1964 and 1965-continued

| Section and Commodity | All Countries |  | Britain |  | United States |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1964 | 1965 | 1964 | 1865 | 1964 | 1965 |
|  | \$000 | \$000 | \$'000 | \$ 000 | \$'000 | \$ ${ }^{\prime} 000$ |
| Icated Materials, Inedible-concl. |  |  |  |  |  |  |
| Paper and paperboard | 54,011 | 58,333 | 1.292 | 1,106 | 50,695 | 54,737 |
| Cotton yarn and thread | 13,887 | 14,538 | 4,229 | 3,584 | 5.741 | 5, 666 |
| Other yarn sud thread. | 18.948 | 13.526 | 8.190 | 6.781 | 3.787 |  |
| Cordage, twine and rope | 10,349 | 9,404 | 2,771 | 1,998 | 1,324 | 1,581 |
| Broad woven fabrica, wool and | 26, 119 | 27,010 | 17,082 | 16,925 | 824 | 742 |
| Broad woven fabrics, cotton. | 74,819 | 70,170 | 3,457 | 3.007 | 43, 170 | 36.034 |
| Brosd woven fabrics, synthetio | 24,753 | 25,765 | 1,468 | 1,51] | 13,173 | 11,513 |
| Broad woven fabrica, mixed fibres | 31,524 | 35,001 | 5,112 | 4,757 | 18,142 | 21,158 |
| Other broad woven [sbrics. | 23,568 | 25,901 | 1,798 | 1,451 | 2,587 | 2.762 |
| Costed or impregnated labrics | 13,412 | 16,046 | 997 | 1,219 | 11,087 | 13,887 |
| Other textile fabricated materi | 35,184 | 39,305 | 2,616 | 2,415 | 25,306 | 30,045 |
| Vegetable oils and fats, except essential oils. | 23,475 | 29,840 | 2,442 | 1.913 | 11,860 | 18,282 |
| Other oils, fate, waxes, extracts, derivatives | 24,518 | 24,857 | $45]$ | 514 | 21,384 | 20.985 |
| Inorganio chemicals | 57,231 | 71,531 | 6,161 | 8,384 | 46,450 | 55,794 |
| Organic chemicals | 93,918 | 106,649 | 10.893 | 10,191 | 72,451 | 83,008 |
| Fertilizers and fertilizer mat | 18, 113 | 15,516 | 45 | - 33 | 14,246 | 13,527 |
| Synthetic and reclaimed rubbe | 21,511 | 22,289 | 221 | 202 | 20,929 | 21,682 |
| Plastics materials, not shaped. | 61,583 | 68,972 | 2.168 | 1,706 | 55,011 | 62,291 |
| Plastic film and sheet.... | 27,674 | 32,667 | 2,661 | 2,717 | 22,766 | 27,514 |
| Other plastica basic ahapes and forms | 16,398 | 20,888 | 607 | 613 | 14.951 | 19,220 |
| Dyeetnffa, except dyeing extracte. | 15,942 | 17,054 | 1,890 | 1,887 | 7,829 | 8,011 |
| Pigmenta, lakes and toners. | 12,112 | 13,282 | 761 | 1,001 | 10,593 | 11,389 |
| Painta and related producte | 9,164 | 10,396 | 482 | 644 | 8,540 | 9,656 |
| Other chemical producte. | 69,360 | 80,189 | 3,361 | 3,397 | 62,002 | 71,553 |
| Fuel oil. | 76,988 | 109,395 | 1,066 | 3,674 | 12,653 | 12,874 |
| Lubricating oils and greases | 18,516 | 21,458 | 190 | 400 | 16.833 | 19,145 |
| Coke of petroleum and coal | 13,195 | 18,115 |  |  | 13,194 | 18,115 |
| Other petroleum and coal producta | 27,778 | 28,562 | 1,967 | 2,248 | 16,895 | 16,481 |
| Bars and rods, steel. | 41,969 | 64,543 | 2,742 | 3,921 | 10,923 | 14,408 |
| Plate, sheet and atrip, steel | 121,587 | 155,745 | 13,369 | 16,839 | 95,332 | 92.268 |
| Structural shapes and sheet piling, steel. | 48,622 | 64,924 | 4,412 | 6,456 | 26,551 | 29.480 |
| Fipes and tubes, iron and st | 43,097 | 48.161 | 6,282 | 4,952 | 22,772 | 23.724 |
| Wire and wire rope, steel. | 18,894 | 22,721 | 6,572 | 8,458 | 4,221 | 5,057 |
| Otber iron and steel and alloy | 27.902 | 41,545 | ${ }^{641}$ | 1,693 | 20,586 | 29.580 |
| Almminum, ineluding alloye. | 39,584 | 49.348 | 3,710 | 3,698 | 34,503 | 42,781 |
| Copper and alloys. | 14, 167 | 26,921 | 1,412 | 8,900 | 11,878 | 21.826 |
| Nickel and alloya. | 24,181 | 29,876 | 189 | 205 | 6,470 | 8.688 |
| Precious metals, inelud | 28.004 | 34.786 | 17.192 | 13,541 | 10,781 | 21,236 |
| Tin, including alloys.. | 17,604 | 21,755 | 1,805 | 30 | 1,732 | 3,223 |
| Other non-ferrous metsls and alloys | 15.200 | 17,903 | 505 | 508 | 11,879 | 12,786 |
| Bolts, nuts and screv | 20,852 | 25,763 | 754 | 973 | 17.748 | 21,128 |
| Other basic hardwas | 30,506 | 36,222 | 2,282 | 2.622 | 24,722 | 27,604 |
| Chain | 13,015 | 12,811 | 1,885 | 2,022 | 6.617 | 7,865 |
| Valves | 23,319 | 28, 802 | 1,830 | 2,217 | 20,131 | 24,674 |
| Pipe fitting | 17,287 | 23,242 | 1,929 | 2,195 | 13,051 | 16,840 |
| Other metal fabricated basic products. | 45,546 | 47, 680 | 8,270 | 4,538 | 36,588 | 39.761 |
| Clay bricks, clay tiles and relractories. . | 27.954 | 31,724 | 2,245 | 2,694 | 22,001 | 23.844 |
| Sheet and plate elass... | 33.198 | 34.277 | 4,383 | 4,986 | 14,361 | 16, 186 |
| Other glass basic products | 17.205 | 18,674 | 1,145 | 1,307 | 13,436 | 15,397 |
| Abrasive basic producta | 13,402 | 14,393 | 381 | 457 | 11.125 | 11,819 |
| Natural and synthetic gem stones. | 13,218 | 14,941 | 1,006 | 1,424 | 1,808 | 2,245 |
| Other non-metallic miners bssic products. | 20.051 | 20,878 | 2,013 | 2,434 | 15,172 | 15,02: |
| Electricity. | 12.348 | 13,657 |  |  | 12,348 | 13,657 |
| Other fabricated materials, inedible. | 34,851 | 37,075 | 3,826 | 3,234 | 27,335 | 29,035 |
| End Products, Inedible. | 3,701,202 | 4,476,416 | 313,349 | 342,701 | 2,954,801 | 3,578,574 |
| A. Machinery........ | 1,210,913 | 1,372,146 | 87,862 | 104, 524 | 1,042,138 | 1,174,267 |
| Engines and turbines, diesel, general purpose. | 18.778 | 25,640 | 4.379 | 6,039 | 13,885 | 19.000 |
| Engines and tarbires, zeneral purpose. | 25,389 | 29,243 | 3,850 | 1,243 | 20,891 |  |
| Electric generators and motors | 34,787 | 41,409 | 10,938 | 11,029 | 23,015 | 26,805 |
| Bearinga. | 41,565 | 50,576 | 3,177 | 4,158 | 32,286 | 37,501 |
| Other mechanical power transmission equipment. | 31,784 | 39,918 | 3,490 | 4,556 | 27,533 | 34,748 |

## 10.-Imports into Canada for Consumption from All Countries, from Britain and from the United States, by Section and Commodity, 1964 and 1965-continued

| Section and Commodity | All Countries |  | Britain |  | United States |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1964 | 1965 | 1964 | 1965 | 1964 | 1965 |
| A. Machinery-concl. |  |  |  |  |  |  |
| Compressors, blowers and vacuum pumps. | 24,871 | 29,355 | 3,372 | 5,081 | 20.788 | 23,020 |
| Pumps, except oil well pumps. | 16,364 | 19,130 | 864 | 1,306 | 14,772 | 16,704 |
| Packaging machinery <br> Other general purpose industrial machinery. | 19,327 | 21,652 | 618 | 1,080 | 17,787 | 19,445 |
|  | 38,146 | 50,179 | 1,613 | 2,309 | 34,767 | 46,221 |
|  | 25,034 | 36,713 | 1,083 | ,935 | 22,023 | 32,208 |
| Industrial lift trucks, powered.. <br> Other materials handling machinery, <br> equipment | 18,054 | 21,276 | 2,636 | 2,790 | 17,251 | 17,392 |
|  | 23,191 | 26,567 | 1,741 | 1,804 | 15,562 | 22,632 |
| equipment <br> Drilling machinery and drill bits. | 38,094 | 41,693 | 879 | 751 | 35,334 | 39,111 |
| Power shovels. | 23,866 | 27,363 | 132 | 123 | 23,327 | 26,572 |
| Bulldozing and similar equipment........ | 28,017 | 33,300 | 378 | 700 | 27,639 | 32,292 |
|  | 34,022 | 42,227 | 317 | 444 | 33,675 | 41,724 |
| Other excavating machinery............. | 23,113 | 28,188 | 50 | 213 | 22,969 | 27,658 |
| Mining, oil and gas machinery........... | 31,317 | 36,421 | 1,975 | 2,790 | 28,364 | 31,462 |
| Construction and maintenance machinery | 31,521 | 39,597 | 866 | 1,331 | 29,600 | 36,861 |
| Machine tools, metalworking............ | 71,348 | 91, 573 | 8,179 | 9,758 | 53,920 | 68,539 |
| Welding apparatus and equipment....... | 12,020 | 16,261 | 320 | ${ }^{526}$ | 11,011 | 15,001 |
|  | 20,264 | 18,876 | 5,298 | 9,351 | 9,596 | 9,260 |
| Rolling mill machinery ${ }^{\text {Other }}$ metalworking machinery............ | 33,643 | 41, 033 | 3,821 | 3,496 | 32,614 | 35,034 |
| Pulp and paper industries machinery.... | 34,233 | 31,434 | 9,338 | 2,814 | 21,329 13,077 | 21,288 11,009 |
| Printing presses....................... | 20,472 | 15,765 16,964 | 4,035 513 | 1,917 710 | 13,077 15,778 | 11, 537 |
| Other printing machinery and equipment | 17,009 35,624 | 16,964 28,763 | 513 2,927 | $\begin{array}{r}710 \\ 2,752 \\ \hline\end{array}$ | 15,778 28,854 | 15,537 20,063 |
| Other textile industries machinery ....... | 24, 457 | 24, 117 | 2,636 | 2,327 | 18,991 | 18,45 |
| Food, beverages and tobacco machinery. | 24,587 | 23,741 | 2,204 | 2,050 | 19,007 | 17,847 |
| Plastics and chemical industry machinery | 20,639 | 28,250 | 915 | 1,291 | 18,282 | 22,609 |
| Other special industry machinery | 38,861 | 40,546 | 2,057 | 2,231 | 31,003 | 31,615 |
| Soil preparation, seeding, fertilizing machinery. | 30,400 | 31,188 | 596 | 534 | 29,408 | 30,083 |
|  | 49,059 | 50,435 | 333 | 142 | 45,786 | 48,801 |
| Combine reaper-threshers............. | 33,185 | 35,176 | 132 | 262 | 32,346 | 34,1 |
| Other agricultural machinery and equipment. | 34,573 | 37,403 | 384 | 430 | 32,939 | 35,430 |
| Wheel tractors, new... Track-laying tractors and used tractors. . | 97,635 | 103,205 | 8,957 | 11,728 | 85,852 | 89,180 |
|  | 20,614 | 27,850 |  | 186 | 20,614 | 27,665 |
| Tractor engines and tractor parts........ | 65,050 | 69,120 | 2,859 | 3,338 | 60,261 | 63,752 |
| B. Transportation and Communication Equipment. | 1,190,671 | 1,613,650 | 102,746 | 115,358 | 984,481 | 1,349, 393 |
| Railway and street railway rolling stock. | 20,927 | 28,130 | 934 | 2,285 | 19,588 | 23,173 |
|  | 18,333 | 24,109 | 9,356 $\mathbf{3 3} 706$ | - 7,132 |  |  |
| Closed sedans, new .................... | 107,870 | 196,159 | 33,796 2,426 | 35,937 2,260 | 33,537 2,968 | 102,821 |
| Other passenger automobiles and chassis. | 12,526 14,152 | 18,112 29,774 | 2,426 | 2,260 419 | 2,968 12,406 | 28,6844 |
| Trucks, truck tractors and chassis....... | - 22,786 | 37,925 | 645 | 1,174 | 18,717 | 27,702 |
| Other motor vehicles. <br> Motor vehicle engines. | 30,063 | 54,927 | 3,041 | 1,235 | 25,888 | 51,183 |
| Motor vehicle engine parts............... | 72,315 | 80,797 | 1,751 | 1,671 | 69,182 | 77, 135 |
| Motor vehicle parts, except engines...... | 539,777 | 683,025 | 7,239 | 7,207 | 528,306 | 669,630 |
|  | 25,697 | 31,091 | 2,600 | 2,549 | 18,951 | 23,278 |
| Ships, boats and parts, except engines... | 11,857 | 19,330 | 1,646 | 2,694 4,960 | 6,116 17.872 | 71,087 |
| Aircraft, complete with engines..........Aircraft engines and parts............ | 18,327 50 | 76,780 60,698 |  | 4,960 18,572 | 36,702 | 41,468 |
|  | 50,252 68,670 | 60,698 69,233 | 13,535 4,705 | 7,007 | 63,862 | 61,91 |
| Aircraft parts, except engines............ | 17,577 | 23,528 | 2,265 | 2,602 | 10,677 | 14,62 |
| Other transportation equipment.......... Telephone and telegraph equipment. . | 24,647 | 25,009 | 5,415 | 4,235 | 15,845 | 17,664 13,547 |
| Television and radiosets and phonographs Electronic tubes and semi-conductors. | 22,395 | 29,028 | - 327 | ${ }^{278}$ | 10,503 | ${ }_{25,086}$ |
|  | 28,458 | 31,762 | 1,787 | 2,136 | 22,989 | 25, |
| Other communication and related equipment. | 84,042 | 94,230 | 10,916 | 11,006 | 62,584 | ,92 |
| C. Other Equipment and Tools.......... | 607,167 | 712,541 | 31,563 | 37,124 | 521,524 | 598, |
| Air conditioning and refrigeration equipment | 52,572 | 54,681 | 4,650 | 3,702 | 46,677 | 48,35 |
| Electric lighting fixtures and portable lamps. | 20,631 | 26,644 | 423 | 481 | 17,074 | 21,97 |
|  | 16,880 | 20,497 | 1,154 | 1,268 | 13,352 | 15,483 |
| Switchgear and protective equipment... Industrial control equipment. | 17,511 | 20,293 | 822 | 936 | 16,214 | 18,51 |

## 10.-Imports into Canada for Consumption from All Countries, from Britain and from the United States, by Section and Commodity, 1964 and 1965 -concluded

| Section and Commodity | At Countries |  | Britain |  | United States |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1984 | 1965 | 1884 | 1965 | 1864 | 1985 |
|  | \$000 | \$ 0000 | \$000 | $\$ 000$ | $\%^{\prime} 000$ | \$'000 |
| End Praducts, Inedible-concl. <br> C. Other Equipmant and Tools-conci. <br> Other electric lishting, distribution |  |  |  |  |  |  |
| equipment | 33,228 | 42,107 | 1,415 | 3,483 | 29,320 | 31,916 |
| Auriliary electric equipment for engines. | 16.941 | 24,566 | 433 | 584 | 13,024 | 23,474 |
| Miscellaneous measuring, controlling instruments | 32,000 | 39.148 | 1,038 | 1,246 | 29,570 | 35,079 |
| Medical and related equip | 24, 504 | 28,001 | 778 | 1,233 | 22,162 | 24,548 |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Salety and sanitation equipment | 19,144 | 20,742 | 1,017 | 1,057 | 17,909 | 19,224 |
| Service industry equipment.. | 21,604 | 25,721 | 377 | 611 | 20,626 | 24,219 |
| Furniture and fixtures.. | 23.977 | 2¢, 993 | t, 117 | 1,042 | 18,024 | 20,405 |
| Hand tools and cutlery | 47,667 | 53,564 | 8,7i8 | 7,635 | 34,032 | 37,820 |
| Electronic computers. | 30,311 | 50,669 | 21 | 354 | 30,048 | 44,767 |
| Other office machines and equipment. . . | 61,975 | 50, 144 | 2.797 | 2,946 | 46,407 | 42.144 |
| Miscellaneous equipment and tools. . . . . | 96,157 | 105,001 | 4,001 | 4,192 | 86,543 | 94,099 |
| D. Personal and Household Goods | 292.034 | 317,794 | 50,724 | 52,122 | 97,639 | 102.112 |
| Outer wear, except knitted | 31,367 | 37, 439 | 2,259 | 2,351 | 6,350 | 7,745 |
| Outerwear, knitted. | 17.373 | 21,381 | 4.352 | 4,670 | 1,524 | 1,638 |
| Other apparel and apparel accessories. | 31,228 | 32,376 | 4.845 | 4,762 | 8,711 | 9.070 |
| Footwear. | 24,824 | 27,067 | 4,535 | 5,055 | 1,989 | 1,963 |
| Watches. clocks, jewellery and silverware | 24,882 | 26,508 | 3,294 | 4,064 | 7,316 | 7.283 |
| Sporting and recreation equipment...... | 19,361 | 18,624 | 1,750 | 1,818 | 11,522 | 9,982 |
| Games, toys and children's vebicles..... | 21,862 | 23,905 | 2,778 | 3,014 | 9,629 | 10,162 |
| House furmisbings . . . . . . . . . . . . . . . . . | 84,762 | 40,050 | 6.168 | 6,468 | 12.149 | 14,923 |
| Kitchen utenails, cutlery and tableware.. | 42,587 | 43,787 | 15,003 | 15,268 | 16.718 | 15,625 |
| Other personal and bousehold goods..... | 43,779 | 46,659 | 5,740 | 4,652 | 21,781 | 23,770 |
|  |  |  |  |  |  |  |
| Medicinal and panarmaceutical products. 37,384 39,390 5,289 6,261 21,763 21,644 <br> Medical, ophthalmic, orthopaedic sup-       |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Newspapers, magazines and periodicals., | 46,289 | 50,000 | 904 | 892 | 42,871 | 46.350 |
| Books and pamphlets | 55,853 | 68,715 | 5,707 | 6,554 | 44,846 | 55,285 |
| Other printed matter. | 31,337 | 33,022 | 1,740 | 1,459 | 27,623 | 29,929 |
| Stationers' and office supplies. | 20,203 | 23,574 | 2,214 | 2,741 | 15,289 | 17,249 |
| Unerposed photographic film and plates. | 24,594 | 29,627 | 3,196 | 3,576 | 16,773 | 21,042 |
| Other photogrephie goods. | 44,665 | 59,051 | 467 | 548 | 35,401 | 47,727 |
| Containers and closures | 43,266 | 52,171 | 1,252 | 1,240 | 41,017 | 47,964 |
| Other end products, inedible.. | 74,819 | 84,022 | 8,676 | 9.515 | 45,532 | 50,623 |
| Special Transactions-Trade. . . . . . . | 218,135 | 266,479 | 7,763 | 9,047 | 194,505 | 249,744 |
|  | 164,263 | 213,765 | 3.497 | 6,751 | 152.642 | 197, 104 |
| Other special transactions-trade........ | 53,872 | 52,715 | 2,265 | 2,293 | 44,283 | 43,641 |
| Totak, Imports | 7,437,707 | 8,633,430 | 578,985 | \$19, 121 | 5,161,285: | 6,045,105 |

## Section 5.-Trade by Section and Stage of Fabrication

This Section contains a series of statistics covering trade by stage of fabrication, based on the new commodity classification (see p.968). The Section totals given in Tables 11 and 12 for the period from 1946 were compiled by converting statistics tabulated on the old classification to the new framework; old classes or fragments of classes were converted to appropriate new classes and changes in content, descriptions or codes of former classes were taken into account as much as possible, but the results for 1957 and previous years are subject to some limitations. (Description of this series continues on p. 992.)
11.-Domestic Exports by Section and Stage of Fabrication, 1946-65

| Year | Sect. I <br> Live <br> Animals | Sect. II <br> Food, Feed, Beverages and Tobacco |  |  |  | Sect. III Crude Materials, Inedible | Sect. IV <br> Fabricated <br> Materials, <br> Inedible | Sect. V End Products, Inedible |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Crude Materials | Fabricated Materials | End Products | Total |  |  |  |
|  | All Countries |  |  |  |  |  |  |  |
|  | $8{ }^{\prime} 000$ | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| 1946. | 23,353 | 404,491 | 174,075 | 238,628 | 817, 194 | 184,435 | 895,617 | 341,615 |
| 1947.. | 20,083 | 431,802 | 240,076 | 214,329 | 886,207 | 221,976 | 1,239,004 | 375,028 |
| 1948.. | 87,877 | 462,291 | 179,126 | 198,483 | 839,901 | 308,821 | 1,391,274 | 414,708 |
| 1949. | 68,903 | 624,451 | 135, 622 | 150,567 | 910,640 | 310,326 | 1,309,755 | 366,917 |
| 1950.. | 84,592 | 510,900 | 134,700 | 169,703 | 815,302 | 332,917 | 1,594,641 | 264,926 |
| 1951.. | 65,304 | 724,844 | 167,782 | 160,012 | 1,052,638 | 430,885 | 1,972,438 | 357,615 |
| 1952. | 5,974 | 989,900 | 181,091 | 147,820 | 1,318,812 | 467,143 | 2,033,701 | 439,048 |
| 1953. | 17,884 | 913,797 | 157,674 | 171,432 | 1,242,903 | 476,429 | 1,949,365 | 396,694 |
| 1954. | 19,407 | 630,031 | 149,058 | 183,582 | 962,672 | 502,040 | 2,030,945 | 331,972 |
| 1955. | 15,645 | 560,297 | 152,112 | 173,088 | 885,498 | 685,912 | 2,363,743 | 290,384 |
| 1956. | 13,401 | 750, 432 | 152,507 | 180,528 | 1,083,467 | 872,967 | 2,441,679 | 325,609 |
| 1957. | 53,999 | 603,474 | 141,317 | 166,661 | , 911,453 | 1,025,398 | 2,406,062 | 369,271 |
| 1958. | 101,534 | 699,896 | 140,904 | 191,450 | 1,032,250 | 1,963,137 | 2,246,818 | 434,500 |
| 1959.. | 55,790 | 660,221 | 159,886 | 199,584 | 1,019,691 | 1,086,994 | 2,461,089 | 386,658 |
| 1960. | 41,038 | 614,277 | 141,402 | 191,283 | 1,946,962 | 1,114,543 | 2,729,389 | 409,683 |
| 1961... | 66,901 | 865,451 | 138,688 | 193,664 | 1,197,803 | 1,195,442 | 2,777,345 | 505,591 |
| 1962. | 68,054 | 808,022 | 151,225 | 212,888 | 1,172,135 | 1,361,595 | 2,907,126 | 654,763 |
| 1963. | 41,971 | 1,012,475 | 157,532 | 249,850 | 1,419,857 | 1,425,951 | 3,106,898 | 779,138 |
| $1964{ }^{\text {r }}$. | 34,514 | 1, 298,519 | 210,942 | 296,426 | 1, 805,886 | 1,616, 145 | 3,502,496 | 1,109,006 |
| 1965.. | 79,133 | 1,142,518 | 194,010 | 293,290 | 1,629,818 | 1,763,701 | 3,728,769 | 1,300,145 |

Britain

|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$ ${ }^{\prime} 000$ | \$'000 | \$ ${ }^{\prime} 000$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1946. | 466 | 202,389 | 69,258 | 107,607 | 379,253 | 39,039 | 147,040 | 28,300 |
| 1947. | 217 | 268,610 | 90,241 | 91,585 | 450,437 | 40,832 | 234,564 | 20,548 |
| 1948. | 226 | 234,056 | 76,524 | 83,279 | 393,859 | 46,178 | 228,256 | 14,670 |
| 1949. | 26 | 303,724 | 52,100 | 47,314 | 403,138 | 57,664 | 212,312 | 28,846 |
| 1950. | 7 | 185,672 | 43,858 | 45,189 | 274,719 | 47,211 | 140,023 | 5,850 |
| 1951. | 3 | 183,278 | 44,868 | 18,677 | 246,823 | 81,918 | 292,464 | 8,815 |
| 1952. | 12 | 241,238 | 39,428 | 2,327 | 282,993 | 95,694 | 356,227 | 9,424 |
| 1953. | 20 | 258,931 | 42,691 | 10,254 | 311,876 | 85,297 | 254,121 | 11,448 |
| 1954. | 18 | 184,747 | 36,323 | 14,045 | 235,115 | 86,914 | 324,446 | 4,476 |
| 1955. | 11 | 221,747 | 37,384 | 10,320 | 269,451 | 103,439 | 389,774 | 4,931 |
| 1956. | 22 | 232,322 | 46,878 | 13,734 | 292,934 | 130,636 | 380,952 | 6,558 |
| 1957. | 35 | 169,330 | 40,515 | 10,499 | 220,344 | 138,124 | 354,896 | 7,417 |
| 1958. | 275 | 218,328 | 33,790 | 29,672 | 281,790 | 139,653 | 330,172 | 19,611 |
| 1959. | 255 | 209,622 | 45,016 | 32,788 | 287,425 | 152,578 | 326,776 | 18,656 |
| 1960. | 210 | 195,553 | 42,975 | 19,718 | 258,246 | 178,936 | 460,357 | 17,338 |
| 1961. | 184 | 179,656 | 39,273 | 19,312 | 238,240 | 204,539 | 440,073 | 26,069 |
| 1962. | 105 | 191,434 | 51,235 | 27,612 | 270,282 | 172,050 | 435,774 | 30,624 |
| 1963. | 46 | 213,133 | 52,432 | 32,198 | 297,762 | 216,316 | 457,459 | 34,555 |
| 1964. | 42 | 207,202 | 54,186 | 50,334 | 311,721 | 236,357 | 602,570 | 48,586 |
| 1965. | 79 | 207,336 | 60,108 | 34,861 | 302,305 | 256,260 | 567,484 | 47,693 |

United States

|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1946. | 17,646 | 83,139 | 16,587 | 51,422 | 151,148 | 119,903 | 547,073 | 41,413 |
| 1947. | 18, 184 | 54,436 | 9,004 | 35,174 | 98,615 | 148,067 | 706,775 | 53,553 |
| 1948. | 85,156 | 137,550 | 15,876 | 47,995 | 201,420 | 208,311 | 901,061 | 96,541 |
| 1949. | 68,009 | 164,279 | 20,292 | 57,023 | 241,594 | 189,311 | 898,347 | 101,020 |
| 1950. | 83,888 | 185,424 | 26,034 | 75,437 | 286,896 | 222,462 | 1,311,568 | 105,726 |
| 1951. | 64,724 | 264,519 | 39,421 | 93,487 | 397,428 | 271,931 | 1,404,542 | 142, 185 |
| 1952. | 5,554 | 246,428 | 46,125 | 99,481 | 392,034 | 277,607 | 1,426,767 | 187, 297 |
| 1953. | 17,197 | 234,968 | 29,193 | 119,723 | 383,884 | 286,796 | 1,512,748 | 201, 236 |
| 1954. | 18,510 | 176,121 | 29,482 | 120,485 | 326,087 | 296,559 | 1,471,992 | 184,101 |
| 1955. | 14,129 | 127,089 | 29,419 | 117,162 | 273,670 | 425,238 | 1,678,919 | 143,481 |
| 1956. | 11,020 | 154,550 | 31,843 | 125,437 | 311,829 | 556,047 | 1,755,733 | 151,984 |
| 1957. | 52,696 | 155,763 | 33,425 | 117,007 | 306, 195 | 655,206 | 1,660,071 | 156,894 |
| 1958. | 99,919 | 161,693 | 31,935 | 124,204 | 317,832 | 652,435 | 1,554,720 | 178,454 |
| 1959. | 54,500 | 129,419 | 32,957 | 127,901 | 290,277 | 730,629 | 1,768,038 | 235, 211 |
| 1960. | 39,121 | 125,188 | 32,860 | 129,923 | 287,971 | 676,879 | 1,698,231 | 220,700 |
| 1961. | 61,060 | 130,025 | 33,794 | 134,302 | 298,121 | 694,914 | 1,760,533 | 283,707 |
| 1962. | 64,422 | 121,930 | 42,366 | 141,485 | 305,780 | 884,041 | 1,968,046 | 375,905 |
| 1963. | 38,312 | 137,654 | 40,756 | 154,462 | 332,872 | 881,401 | 2,069,229 | 425,436 |
| 1964r. | 30,115 | 144,645 | 49,163 | 168,161 | 361,969 | 978,637 | 2,237,248 | 642,975 |
| 1965....... | 72,008 | 164,498 | 48,203 | 196,216 | 408,917 | 1,012,093 | 2,481,658 | 847,472 |

## 11.-Domestic Exports by Seetion and Stage of Fabrication, 1846-65

| $\begin{gathered} \text { Seot. VI } \\ \text { Special Transactiono-Trade } \end{gathered}$ |  |  |  | Total Domestic Erports | Recapitulation Stage of Fabrication |  |  | Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Crude Materials | Fabricated Msterials | End Products | Total |  | Crude Materials | Fabricated Materials | End Products |  |
| Ald Counteres |  |  |  |  |  |  |  |  |
| \$000 | 8000 | \$000 | \$'000 | §'000 | $8 \cdot 000$ | \$ 000 | \% 000 |  |
| 238 | 2,700 | 325 | 3,268 | 2,265,476 | 612,517 | 1,072,392 | 580,568 | 18 |
| 300 | 5.472 | 361 | 6,133 | 2,748,431 | 674,161 | 1,484,552 | 589,718 | . .1947 |
| 304 | 3,251 | 333 | 3,888 | 3,046, 469 | 859,293 | 1,573,651 | 613,524 | ... 1948 |
| 141 | 2,120 | 148 | 2,409 | 2,968,948 | 1,003, 821 | 1,447,497 | 517,632 | ... 1949 |
| 48 36 | 1,890 3,200 | 50 87 | 1,988 | $3,094,365$ $3,882,153$ | $1,928,457$ $\mathrm{f}, 221,069$ | $1,731,231$ $2,143,420$ | $434+679$ 517,664 | ( . 1950 |
| 32 | 4,699 | 33 | 4,763 | 4,269,441 | 1,463, 049 | 2, 219,491 | 586,901 | . 1955 |
| 25 | 2,863 | 26 | 2,914 | 4,086, 190 | 1,408,135 | 2,109,902 | 568,152 | . 1953 |
| 25 | 2,194 | 26 | 2,246 | 3,849,281 | 1,151,503 | 2,182,197 | 515,580 | . 1954 |
| 27 | 3,621 | 1,799 | 5,447 | 4,246.630 | 1,261,881 | 2,519,476 | 465, 271 | . 1955 |
| 32 1,850 | 3,742 3,225 | 4.730 7.540 | 8.504 12.615 | $4,745,626$ $4,778,799$ | 1,636,832 | 2, 597,928 | 510,867 543,472 | 1956 1957 |
| 1,858 | 3.076 | 8,263 | 13,197 | 4,791,436 | 1,766,425 | 2,380,798 | 634,213 | 1958 |
| 1,881 | 2,832 | 6,638 | 11,450 | 5,021,672 | 1,804,980 | 2,623,807 | 592,880 | 1959 |
| 1.937 | 3.471 | 8.552 | 13,960 | 5,255,575 | 1,771.795 | 2, 874,262 | 609,518 | 1960 |
| 4.337 | 403 | 7,164 | 11,903 | 5,754,986 | $2,132,131$ | 2,916,436 | 706,419 | 1961 |
| 3.991 | 340 | 10.518 | 14,849 | 6,178,523 | 2,241,662 | 3,058.691 | 878,169 | 1962 |
| 9.771 | 748 | 14,196 | 24,714 | 6,798,529 | 2,490, 168 | 3,265,178 | 1,043, 184 | . 1968 |
| 10,090 9,935 | 716 720 | 15,385 12,857 | 26,171 23,512 | $8,094,219$ $8,525,078$ | $2,959,268$ $2,995,287$ | $3,714,154$ $3,923,499$ | $1,420,797$ $1,606,292$ | 19648 .1965 |
| Britain |  |  |  |  |  |  |  |  |
| 7200 | \$'000 | \$ 000 | \$'000 | \$000 | \% 000 | \$000 | $\$^{+} 000$ |  |
| 4 | 33 | 4 | 41 | 594,138 | 241,898 | 216,331 | 135,911 | . 1946 |
|  | 103 |  | 120 | 746,718 | 809, 667 | 324,908 | 112,142 | $\ldots . .1947$ |
| - | ${ }^{61}$ | - | 61 | 683,249 | 280,460 | 304,841 | 97,949 | ... 1948 |
| - | 88 | - | 88 | 702,074 | 361,414 | 264,500 | 76,160 | ... 1949 |
| - | 85 | $\cdots$ | 85 | 467,896 | 232, 890 | 183,966 | 51,039 | ... 1950 |
| - | 100 | - | 100 | 630,124 | 265,199 | 337, 432 | 27,492 | ... 1951 |
| $\cdots$ | 110 | $\cdots$ | 110 | 744,461 | 336,944 | 395,765 | 11.751 | .... 1952 |
| - | 22 | - | 22 | 662,785 | 344,248 | 296,834 | 21,702 | .... 1953 |
|  | 63 |  | 63 | 651,038 | 271,679 | 360,832 | 18,541 | .... 1954 |
|  | 34 |  | 34 | 767,642 | 325,197 | 427, 192 | 15,251 | .... 1955 |
| 28 | 11 | 29 | 11 | 811, 113 | 362,980 | 427, 841 | 20,292 | .....1956 |
|  | 25 | 29 27 | 82 75 | 720,898 771576 | 307,517 | 395.436 363,984 | 17,945 49310 | ... 19578 |
| ${ }_{3}^{20}$ | 42 | 27 34 | ${ }^{75}$ | 771,576 785,802 | 358,282 | 363,984 371.836 | 19,310 81,478 | .... 1958 |
| 42 | 80 | 81 | 203 | 918,290 | 374,741 | 503,412 | 37,137 | ... 1960 |
| 97 | 7 | 135 | 240 | 909,344 | 384,476 | 479.353 | 45,516 | ... 1961 |
| 101 | 7 | 97 | 205 | 909,041 | 368,890 | 487.016 | 58.333 | 1962 |
| 256 | 17 | 426 | 699 | 1,006,838 | 429,751 | 509, 908 | 67,179 | . 1963 |
| 287 284 | 28 20 | 188 | 503 | 1,199,779 | 443,888 | 856,784 | 99.108 | 1964 |
| 284 | 20 | 183 | 487 | 1,174,309 | 463,969 | 627,612 | 82.737 | 1065 |
| United States |  |  |  |  |  |  |  |  |
| \$ 000 | \$000 | \$000 | \$'000 | \$ 000 | $\$ 000$ | \%000 | \$'000 |  |
| 49 | 259 | 76 | 384 | 877,568 | 220.737 | 563,919 | 92,911 | . 1946 |
| 69 | 359 | 111 | 538 | 1,025,732 | 220.756 | 716,138 | 88,838 | .... 1947 |
| 15 | 401 | 23 | 438 | 1,492,929 | 431.032 | 917,338 | 144,559 | ... 1948 |
| 86 | 390 | 38 | 464 | 1,498,745 | 421,635 | 1919,029 | 188.081 | ... 1949 |
| 21 | 471 | 22 | 514 | 2,011,052 | 401, 795 | 1,338,073 | 181,185 | .... 1950 |
| 11 | 472 | 12 | 495 | 2,289,753 | 601,1800 5298 | 1,444,486 | 285,684 $\mathbf{2 8 6 , 7 9 0}$ | . . 195195 |
| 10 | 514 | 11 | 535 | 2,402,397 | 538.971 | 1,542,455 | 320,970 | $\ldots .1953$ |
| 8 | 489 | 8 | 486 | 2,297,734 | 491,198 | !, 501, 943 | 304, 594 | .... 1954 |
| 10 | 481 649 | 10 | 500 | 2,535,938 | 568, 466 | 1,708,819 | 260,653 | ... 1955 |
| 10 | 649 |  | 1,657 | 2,788,270 | 721, 627 | 1,788.225 | 278,420 | ... 1956 |
| 1,482 1,508 | ${ }_{906}^{906}$ | 3,115 | 1.503 4.708 | 2,836,565 | 865,147 | 1,694,402 | 277,016 | ... 1957 |
| 1,508 1,617 | 922 1,094 | 2,278 1,784 | 4,708 4,495 | 2,808,067 | 915,555 | 1,587,577 | 304,936 | ... 1958 |
| 1,617 1,530 | 1,094 | 1,784 6,643 | 4,495 9,279 |  | ${ }_{8}^{918.165}$ | 1,802,089 | 364,896 | ... 1959 |
| 3,519 | 97 | 8,225 | 8,841 | 8, 107, 76 | 859,518 | 1,794,424 | 457, 4266 | . 1960 |
| 3,155 | 277 | 6,812 | 10.243 | 3, 8008,439 | 1,073,548 | 2,010.689 | 524,202 | .... 1962 |
| 7,801 7,985 | 571 | 10,758 | 19,130 | 3,766,380 |  | 2,110.556 | 590, 656 | . 1063 |
| 7,985 7,802 | 550 574 | 11,631 9,981 | 20,116 18.307 | $4,271,059$ $4,840,456$ | 1, $1.161,332$ | 2, 288,961 | 822,767 | .1964r |
| 7,802 | 574 | 9,931 | 18.307 | 4,840,456 | 1,256,401 | 2,530,435 | $1,053,619$ | . 1965 |

12.-Imports by Section and Stage of Fabrication, 1946-65

| Year | Sect. I <br> Live <br> Animals | Sect. II <br> Food, Feed, Beverages and Tobacco |  |  |  | Beot. III Crude Materials, Inedible | Sect. IV Fabricsted Materisls. Inedible | Sect. V End Products, Inedible |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Crude Materials | Fabricated Materials | End Products | Total |  |  |  |
|  | All Coyntries |  |  |  |  |  |  |  |
|  | \$'000 | \$ ${ }^{+} 000$ | \% 000 | \$'000 | \$ 000 | \$'000 | \$ ${ }^{\prime} 000$ | \$1000 |
| 1946. | 3,058 | 154,846 | 64,948 | 39,961 | 259.755 | 410,417 | 499, 194 | 642,651 |
| 1947. | 3,431 | 151, 162 | 85,622 | 49.590 | 286,374 | 332,347 | 726,893 | 953,659 |
| 1948. | 3,399 | 136,009 | 91,012 | 51, 660 | 278, 681 | 685, 117 | 741, 106 | 879,520 |
| 1949 | 2,997 | 158,949 | 97,236 | 61,289 | 312.474 | 613,114 | 750, 186 | 1,008,899 |
| 1950. | 2,807 | 200,920 | 114,570 | 66,513 | 382,003 | 744,771 | 825,408 | 1,146,341 |
| 1951. | 3,222 | 217,119 | 115,900 | 90,005 | 423,025 | 904,510 | 1,108,837 | 1,515,096 |
| 1953. | 3,593 | 215,35] | 98,051 | 90,071 | 403,474 | 711,674 | 1,036,545 | 1, 690,063 |
| 1953. | 3,604 | 220, 239 | 89,980 | 94,641 | 404,860 | 665,652 | 1,110,339 | $2,005,885$ |
| 1954. | 3,800 | 253,481 | 90,736 | 100,289 | 433,507 | 600,823 | 1,012,813 | 1,818,972 |
| 1955. | 4,689 | 249,956 | 104,932 | 108,567 | 463,454 | 689,291 | 1,187,775 | $2,150,115$ |
| 1956. | 5,375 | 279,318 | 114,798 | 129,540 | 523,656 | 825,787 | 1,528, 130 | 2,590,053 |
| 1957. | 5,341 | 271, 622 | 136,983 | 147,975 | 556, 579 | 830.162 | 1,505,796 | 2,501,191 |
| 1958. | 5, 355 | 280.722 | 123,986 | 156,004 | 560, 712 | 690, 140 | 1,313, 053 | 2,402,125 |
| 1959. | 13,175 | 279,835 | 129,516 | 134,512 | 563,863 | 728,238 | 1,392,791 | 2,731,352 |
| 1960. | 7,126 | 298,651 | 120,476 | 155,519 | 574,647 | 744, 983 | 1,343,775 | 2,718,262 |
| 1961. | 7,026 | 327,268 | 129,473 | 184,785 | 621, 526 | 763,536 | 1,395,779 | 2,879,561 |
| 1962. | 7,561 | 355,310 | 143,314 | 158,139 | 656,763 | 826,523 | 1,487,419 | 3,152,226 |
| 1963. | 9,678 | 377,592 | 218,595 | 174,291 | 770,477 | 897,296 | 1,670, 293 | 3,173,449 |
| $1964{ }^{\text {r }}$. | 17, 124 | 395,475 | 187,316 | 194,806 | 777,598 | 360,662 | 1,812,988 | 3,701,202 |
| 1965..... | 10,801 | 404,626 | 148,532 | 205.677 | 758,836 | 1,006,274 | 2,114,423 | 4,476,616 |
|  | Bratain |  |  |  |  |  |  |  |
|  | \$'000 | \$ 000 | \$ 000 | \$7000 | $8 \cdot 000$ | \$'000 | \$000 | \$ 000 |
| 1946. | 166 | 12 | 45 | 5,012 | 5,069 | 10,822 | 74,618 | 45,744 |
| 1947. | 234 | 415 | 693 | 6, 449 | 7,557 | 13,663 | 84,315 | 75, 430 |
| 1948. | 265 | 357 | 1.788 | 10,756 | 12,881 | 30,351 | 134,579 | 106, 180 |
| 1949. | 222 | 394 | 2,687 | 15,566 | 18,647 | 27,081 | 122, 105 | 131,474 |
| 1950 | 260 | 1,901 | 4,834 | 15,400 | 22, 135 | 40,607 | 143,858 | 191,162 |
| 1951. | 327 | 808 | 2,370 | 16,215 | 19,393 | 53,681 | 165,956 | 172,382 |
| 1952. | 248 | 1,118 | 4,014 | 16,511 | 21,641 | 24,006 | 131,690 | 188,694 |
| 1053. | 479 | 3, 290 | 3.511 | 17,512 | 24,313 | 31,001 | 181,286 | 223,956 |
| 1954. | 286 | 4,780 | 3,632 | 17,081 | 25,493 | 23,518 | 141,962 | 185, 898 |
| 1955. | 260 | 2,736 | 4,860 | 17, 760 | 25,356 | 29,351 | 146, 740 | 187,327 |
| 1858 | 360 | 2,548 | 5,260 | 17,871 | 25, 679 | 28,750 | 196,514 | 219,421 |
| 1957. | 584 | 3,037 | 5,988 | 19,775 | 28,800 | 28,078 | 197,403 | 246,574 |
| 1858. | 470 | 3,897 | 6,765 | 20,074 | 30.736 | 24,040 | 169,043 | 288,543 |
| 1859 | 455 | 5,630 | 7,590 | 20, 259 | 33.479 | 25,640 | 177,662 | 345,291 |
| 1960. | 198 | 4,283 | 8,338 | 20, 228 | 32.848 | 25,236 | 167,531 | 357,012 |
| 1961. | 142 | 4,648 | 8,117 | 20,975 | 33,740 | 28, 139 | 160,503 | 388,203 |
| 1962. | 516 | 4,138 | 7, 44 t | 20,316 | 31,894 | 31,428 | 176,785 | 316,929 |
| 1963 | 474 | 5,327 | 6,667 | 19,600 | 31. 595 | 36,401 | 168,881 | 284,857 |
| 19645..... | 432 | 4,425 | 3,161 | 27,230 | 34.817 | 37,304 | 180,331 | 313,348 |
| 1965....... | 125 | 8,189 | 3,220 | 28,911 | 40,320 | 36,995 | 189,933 | 342,701 |
|  | United States |  |  |  |  |  |  |  |
|  | \$'000 | \$'000 | 5'000 | ${ }^{+} 000$ | 8000 | \$ 000 | \$'000 | \$ 600 |
| 1946........ | 2,884 | 85,993 | 20,889 | 15,874 | 122,756 | 283, 203 | 377,729 |  |
| 1947....... | 3,178 | 83,596 | 25,828 | 25,747 | 135,170 | 371,694 | 554, 879 | $851,470$ |
| 1948...... | 3,092 | 51,289 | 12,931 | 10.565 | 74, 784 | 425,719 | 526, 855 | 749,065 |
| 1949. | 2.757 | 63,425 | 17,895 | 21, 096 | 102,416 | 383, 150 | 560,106 574,219 | 845,094 912,237 |
| 1950. | 2,020 | 83,983 | 18,224 | 21.895 | 124, 102 | 457, 172 | 574,219 | 912,237 $1.287,352$ |
| 1951....... | 2,859 | 100,452 | 23,113 | 33, 113 | 156,677 | 487, 395 | 773, 655 | 1,287,352 |
| 1952........ | 3,320 | 103,320 | 20,873 | 40,408 | 164,601 | 406,743 | 787,222 | 1,462,473 |
| 1953........ | 3,124 | 99,745 | 23,322 | 47,026 | 170.093 | 358,721 | 829,821 | 1,703,389 |
| 1954. | 3,485 | 118,581 | 28,343 | 50,393 | 197,317 | 309,877 | 747,534 | 1,544,438 |
| 1955. | 4,325 | 122,434 | 29,572 | 55,031 | 207,038 | 339,248 | 874,934 | 1,851,874 |
| 1956. | 4,772 | 144, 140 | 37, 136 | 70, 234 | 251, 310 | 401.715 | 1,096,282 | 2,214,930 |
| 1957. | 4,423 | 139,380 | 36,087 | 81.133 | 256, 600 | 397, 193 | 1,095,931 | $2,071,619$ $1,803,424$ |
| 1958. | 5,190 | 142,044 | 34,458 | 86, 233 | 262,735 273,072 | 291,503 300.646 | 942,761 955,179 | $1,803,424$ $2,103,953$ |
| 1059. | 12,300 | 147,882 | 41,304 | 83,876 | 273, 072 | 300.646 | 955,179 | $2,103,963$ |
| 1960. | 6,838 | 163,038 | 41, 111 | 85,307 | 289.456 | 325,818 | 922,257 | $2,066,485$ $2,178,165$ |
| 1961. | 6,493 | 187,383 | 45, 536 | 87, 214 | 320, 133 | 335,902 | 943,086 980.713 | 2, 178,165 |
| 1962. | 6.689 | 208,465 | 52,730 | 78,858 | 341, 053 | 360.125 383 | 980.713 1.036 .290 | 2,499,281 |
| 1953. | 8,888 | 218,332 | 53,972 | 85,653 | 357.958 | 383,907 443,025 | $1,036,299$ $1,197,118$ | 2, $2,564,801$ |
| 1964r $+\ldots \ldots$ | 16.365 | 217, 033 | 53,976 60,732 | 85,062 | 356,075 374,527 | 443,025 490,848 | $1,197,118$ $1,350,165$ | 8,557,8014 |
| 1965........ | 10,246 | 223,372 | 60,732 | 90,423 | 374,527 | 490,848 | 1,350,165 | 8,518,074 |

12.-Imports by Section and Stage of Fabrication, 1946-65

| $\begin{gathered} \text { Sect. VI } \\ \text { Special Transictions-Trade } \end{gathered}$ |  |  |  | Total Imports | Recapitulation Stage of Fabrication |  |  | Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Crude Materials | Fabricated Materials | End Products | Total |  | Crude Materials | Fabricated Materials | End Products |  |
| All Codntries |  |  |  |  |  |  |  |  |
| \$'000 | \$ 800 | \$ 000 | \$ 000 | \$'000 | 81000 | \$000 | \$'000 |  |
| 2,004 | 6,182 | 14,484 | 23,280 | 1,838,356 | 570,025 | 570,324 | 697, 106 | . . . 1946 |
| 4,100 | 9,661 | 24,501 | 38,262 | 2,540,966 | 695.040 | 822,176 | 1, 027,750 | + . . . 1947 |
| 2,429 | 6,561 | 21,445 | 30,436 | 2,618,258 | 820,954 | 838.679 | -952,625 | ..... 1948 |
| 2,449 | 8,329 | 15.577 | 26,354 | 2,714,025 | 772,509 | 855,751 | 1,085,765 | . 1949 |
| 2,198 | 8,617 | 13,528 | 24,343 | 3,125, 172 | 959, 196 | 948,595 | 1,226,382 | . . . . 1950 |
| 3,826 | 13,661 | 32,763 | 50,249 | 4,004,939 | 1,128,677 | 1,238,398 | 1,637,864 | . . . . . 1951 |
| 4,988 | 16,505 | 49,576 | 71,069 | 3,916,418 | 985,606 | 1,151,101 | 1, 829,710 | . . . . . 1959 |
| 5,039 | 17,457 | 34,962 | 57,458 | 4,247,808 | 894,594 | 1,217,776 | 2,135,438 | . . . . . . 1953 |
| 6,397 | 19,776 | 51,313 | 77,486 | 3,967,401 | $864 ; 501$ | 1,132,325 | 1,970,574 | . . . . . 1954 |
| 6,670 | 19,231 | 36,529 | 62.431 | 4,567,754 | 960,606 | 1,311,938 | 2,295,211 | ...... 1955 |
| 7.583 | 28,868 | 39,750 | 73,951 | 5,546,952 | 1,118,013 | 1,669,596 | 2,759,343 | ...... 1956 |
| 7.704 | 25,467 | 40, 106 | 74,277 | $5,473,346$ | 1,114,829 | 1,669,246 | 2,689,272 | . . + . . . 1957 |
| 8.348 | 28,864 | 43.297 | 78,508 | 5,050, 492 | 985, 165 | 1,463,903 | 2,601,426 | . . . . . 1958 |
| 8.196 | 28,862 | 42,444 | 79,501 | 5,508,921 | 1,029,444 | 1,551,169 | 2,928,308 | . . . . . . 1939 |
| 10,322 | 30,326 | 52,945 | 93,593 | 5,482,695 | 1,061,392 | 1,494,577 | 2,926,726 | . 1960 |
| 11. 430 | 31,480 | 58,231 | 101,152 | 5,768,578 | 1.109,259 | 1,556, 742 | 3, 102,577 | ....... 1961 |
| 15,727 | 31.025 | 80,531 | 127,284 | 6,257,776 | 1,205,121 | 1,661,758 | 3,390,896 | . . . . . . 1962 |
| 17,301 | 31,195 | 88,525 | 137,021 | 6,558,299 | 1,301,862 | 1,820,083 | 3,436,265 | 1983 |
| 27,222 | 50.816 | 140,097 | 218,135 | 7,487, 707 | 1, 400, 483 | 2,051,120 | 4,036,105 | .1964r |
| 33,118 | 62,293 | 171,068 | 266,479 | 8,633, 430 | 1,454,819 | 2,325,248 | 4,853,361 | 1965 |
| Britain |  |  |  |  |  |  |  |  |
| \$'000 | \% 000 | \$000 | \%000 | \$1000 | \$ 000 | '000 | *'000 |  |
| 5 | 529 | 467 | 1,001 | 137,420 | 11,005 | 75,192 | 51,223 | ....... 1946 |
| 142 | 981 | 1.933 | 3,006 | 184,205 | 14,454 | 85,939 | 83,812 | ....... 1947 |
| 141 | 1,498 | 7.659 | 9,298 | 293,583 | 31,114 | 137,845 | 124, 575 | ...... 1948 |
| 90 | 1,658 | 1,083 | 2.831 | 302,420 | 27,787 | 128,510 | 148, 123 | . . . . . 1949 |
| 72 | 2,055 | 544 | 2,671 | 400,793 | 42,840 | 150,847 | 207,106 | . . . . . 1950 |
| 87 | 2,704 | 715 | 3,506 | 415, 194 | 54,903 | 171,030 | 189,262 | . . . . . 1951 |
| 106 | 2,723 | 2,467 | 5,296 | 351,576 | 25,476 | 138,427 | 187,672 | . . . . . 1952 |
| J62 | 3,129 | 1,115 | 4,406 | 445,441 | 34,932 | 167,926 | 242,583 | . . . . . 1953 |
| 254 | 2,845 | 1,973 | 5,073 | 382,229 | 28,838 | 148,439 | 204, 952 | $\ldots . . .1954$ |
| 173 | 2,881 | 1,031 | 4,084 | 393,117 | 32,520 | 154,481 | 204, 118 | . . . . . 1855 |
| 203 | 4,359 | 1,085 | 5,647 | 476,371 | 31,861 | 206,133 | 238,377 | . . + +... 1956 |
| 219 | 4,518 | 1,142 | 5,879 | 507,319 | 31,918 | 207,910 | 267,491 | . + + + . 1957 |
| 247 | 4,146 | 1,279 | 5,673 | 518,505 | 28,654 | 179,934 | 309.896 | $\ldots . . .1958$ |
| 287 | 4,448 | 1,362 | 6,077 | 588,573 | 31,992 | 189,700 | 366,882 | ....... 1959 |
| 295 | 4,316 | 1,497 | 6, 107 | 588, 032 | 30,012 | 180,185 | 378,735 | . 1960 |
| 489 | 4,506 | 2,470 | 7,464 | 618,221 | 33,418 | 173,126 | 411,678 | .... . . 1061 |
| 603 | 1,834 | 3,073 | 5.510 | 563.062 | 36,685 | 186,060 | 340,318 | .... . . 1962 |
| 582 | 1,054 | 2.955 | 4,591 | 526,800 | 42,784 | 178,602 | 307,412 | . 1963 |
| 978 | 1,772 | 5,013 | 7,762 | 573,985 | 43,139 | 185,204 | 345,592 | .1964r |
| 1,137 | 2,084 | 5,846 | 9,047 | 819,121 | 46,446 | 195,217 | 377,458 | 1965 |
| United States |  |  |  |  |  |  |  |  |
| \$ 7000 | \$ 000 | \% 000 | 8 '000 | \$'000 | \$000 | \$ 000 | \$*000 |  |
| 2,564 | 5,067 | 13,748 | 21,380 | 1,384,485 | 374,644 | 403,685 | 606,154 | ..... 1946 |
| 3,818 | 8,034 | 21,872 | 33.723 | 1,949,914 | 462,286 | 588,541 | 899,088 | ..... . 1947 |
| 2,063 | 4,277 | 12,636 | 18,975 | 1,798,490 | 482,163 | 544,003 | 772,266 | ....... 1948 |
| 2,236 | 5,582 | 13,885 | 21,704 | 1.915,227 | 451, 568 | \$83,583 | 880,075 | .... . 1949 |
| 2,030 | 5,270 | 12,482 | 19,782 | 2,089,53] | 545,205 | 597,713 | 946,614 | . . . . . . 1950 |
| 3,650 | 8,904 | 31,594 | 44,149 | 2,752,087 | 594,356 | 805.672 | 1,352,059 | ...... 1951 |
| 4.780 | 11,858 | 48,595 | 83.233 | 2,887,593 | 518, 163 | 819.953 | 1,549,476 | .... 1058 |
| 4,780 | 11,904 | 33,272 | 49.956 | 3,115.203 | 466.370 | 805.147 | 1,783,687 | . . . . . 1953 |
| 6,938 | 14,406 | 48.283 | 68.628 | 2,871,279 | 487,881 | 790.283 | 1,643,114 | . . . . . 1954 |
| 6,276 | 13,081 | 34,367 | 53,725 | 3,331,143 | 472.283 | 1917,587 | 1,941,272 | ...... 1955 |
| 7,133 | 17,444 | 37,608 | 62,185 | 4,031,395 | 557,760 | 1,150,862 | 2,322,772 | ..... . 1956 |
| 7.256 | 16,579 | 37,791 | 61,626 | 3,887,391 | 548,251 | 1,148,597 | 2,190,543 | ...... 1957 |
| 7.790 | 16.313 | 40,433 | 64,535 | 3,460, 147 | 446,527 | -993,532 | 2,020,090 | ...... 1958 |
| 7.576 | 17,043 | 39.296 | 63.915 | 3,709,065 | 468,414 | 1,013,596 | 2,227, 125 | ....... 1859 |
| 9,410 | 18,000 | 48,361 | 75,771 | 3,686,625 | 505, 104 | 1981,368 | $2,200,153$ | ...... 1900 |
| 10,178 | 18.048 | 51,963 | 80,189 | 3, 863,968 | 539,958 | 1,006,670 | 2,317,342 | . . . . . 1961 |
| 14,217 | 24,540 | 72,922 | 112,678 | 4,299.589 | 589,496 | 1,057,983 | 2,652,061 | .... . . 1962 |
| 15,813 | 26,606 44,540 | 81,035 | 123.454 | $4,444,586$ | 626,940 | 1, 116,877 | 2,700,738 | ...... 1963 |
| 24,764 | 44,549 | 127,593 | 198,905 | 5,164,285 | 701, 187 | 1,295,643 | 3,187,456 | ...... 1964 |
| 28,920 | 50,097 | 154,728 | 240,744 | 6,045,105 | 754,3*6 | 1,486,994 | 3.823,725 | +...... 1965 |

To classify exports and imports by Stage of Fabrication, that is, within the categories of Crude Materials, Fabricated Materials and End Products, requires a secondary classification of the commodities in certain Sections. Live Animals (Sect. I), being a natural product, is considered as crude materials; Food, Feed, Beverages and Tobacco (Sect. II) is allocated as follows: Crude Materials includes natural products not further processed than cleaned or prepared for shipment; Fabricated Materials includes commodities which are further processed and are used in processing industries rather than for direct human consumption, and also all commercial stock feeds; End Products includes commodities which are further processed and are mainly used directly for human consumption, and also prepared pet feeds. Sects. III, IV and V are clearly defined in the Standard Commodity Classification. Sect. VI contains relatively few classes; these have been pro-rated as necessary for both exports and imports according to atudies undertaken over a number of years.

Exports. - An analysis of the figures for 1946-65 shows that the export totals followed an almost constantly upward trend, advancing 3.8 times, the most pronounced gains being made in 1959-65. Every Section recorded increases, ranging from 2.0 times for Food, Feed, Beverages and Tobacco, 3.4 times for Live Animals, 3.8 times for End Products, Inedible, 4.1 times for Fabricated Materials, Inedible to 9.6 times for Crude Materials, Inedible. Food, Feed, Beverages and Tobacco recorded a slight decrease in 1965 compared with 1964 . During the period a variety of trends were discernible: Live Animals accounted for only about 1.0 p.c.; Food, Feed, Beverages and Tobacco accounted for a declining proportion ranging from 36.1 p.c. in 1946 to 18.0 p.c. in 1960 and 19.1 p.c. in 1965 ; and Crude Materials, Inedible rose from 8.1 p.c. in 1946 to 22.0 p.c. in 1962 and 20.7 p.c. in 1965. Fabricated Materials, Inedible accounted for the greatest proportion of the exports, averaging about 48 p.c. over the period. End Products, Inedible, in the five latest years, recovered the relative importance ( 13.7 p.c.) it had in 1946-49 when the over-all export totals were less than half those of today. Special Transactions-Trade remained unimportant at $0.2 \mathrm{p} . \mathrm{c}$.

Analysis of exports by stage of fabrication shows that Crude Materials accounted for 35.1 p.c. of total exports in 1965 , having increased 4.9 times since 1946 with larger advances in 1960-65. Fabricated Materials increased 3.7 times since 1946 and accounted for a decreased proportion of about 48 p.c. in the five latest years; End Products, although lower during a good portion of the 1946-64 period, increased substantially in the two latest years to almost threefold the 1946 total, and in 1965 accounted for some 19 p.c. of total exports.

Imports.-Total imports also showed an increasing trend; they advanced 4.7 times during the period $1946-65$ but, except for 1965, aggregate gains since 1960 were less than those shown by exports. Food, Feed, Beverages and Tobacco, which accounted for about 10 p.c. of the total, increased 2.9 times; Crude Materials, Inedible, although increasing 2.4 times during the period, showed a consistently decreasing relative importance from a peak of 26.2 p.c. in 1948 to 11.7 p.c. in 1965. Fabricated Materials, Inedible, which also decreased in importance, increased 4.2 times; End Products, Inedible, the proportion for which fluctuated around 48 p.c. over the past ten years, increased 7.0 times; and Special Transac-tions-Trade, rose 11.4 times.

In the stage-of-fabrication analysis, Crude Materials increased 2.5 times in the 1946-65 period but accounted for a relatively decreasing proportion of total imports, dropping from a peak of 30.4 p.c. in 1950 to an average of about 20.0 p.c. in 1954-65; Fabricated Materials increased 4.1 times in 1946-65 with marked advances in the 1954-65 period; End Products advanced 7.0 times the 1946 value with greatest increases in the 1954-65 period and accounted for 56.2 p.c. of the total compared with 37.9 p.c. in 1946 , averaging about 52.0 p.c. over the $1954-65$ period.

## PART II.-THE GOVERNMENT AND FOREIGN TRADE

Section 1.-Federal Foreign Trade Services*

Foreign trade contributes substantially to the welfare and prosperity of Canadians, largely because the productive capacity of Canada is greater than the ability of its population to consume the output of farms, factories, forests, fisheries and mines. Every effort is made, therefore, to establish and maintain close commercial relations with other countries whose markets are essential to the Canadian economy. It is appreciated, however, that two-way trade should be encouraged so that goods and services may be accepted in partial payment for the products Canada is in a position to export. Furthermore, many commodities not indigenous to this country must be imported. Some of these are required for industrial processes and others may be classed as consumer goods necessary for the maintenance of the Canadian standard of living.

Although numerous private firms have established connections in other countries that enable them to maintain a steady flow of goods in either direction, others require the assistance of government agencies in finding markets or sources of supply. Import and export controls imposed by many countries for a variety of reasons, together with foreign exchange difficulties, present problems that no single firm or even an association of manufacturers, exporters or importers can solve without assistance from government representatives. The federal Department of Trade and Commerce, the primary function of which is the promotion of external trade, makes available to business men a wide variety of services to assist them in selling their products abroad. These services are provided by the Department's head office in Ottawa, six regional offices in Canada, and a corps of trade commissioners stationed around the world.

Services available from the various branches, divisions and agencies of the Department of Trade and Commerce are described below. The work of these entities is interrelated, each operating in its own field but working closely with the others to effect the over-all objective of trade promotion.

Trade Commissioner Service.--The Trade Commissioner Service, as the overseas arm of the Department, is actively engaged in the promotion of Canadian trade and the protection of Canada's commercial interests; 67 offices are maintained in 48 countries.

Every effort is made by Trade Commissioners to bring Canadian exporters and prospective buyers together. On their own initiative, and in response to requests from the Department and Canadian business men, they study potential markets for specific Canadian commodities and services. Economic reports provide background information necessary to the formulation of Departmental trade policy. Reports are provided on the demand in the country concerned, prices, competition, trade and exchange regulations, tariffs, shipping and packaging requirements, credit terms, channels of distribution, labelling regulations, etc. Inquiries from local business men for goods obtainable from Canada are forwarded to the Department in Ottawa, or directly to Canadian firms in a position to supply the products required.

The supervision of Canadian exhibits at overseas trade fairs and the provision of assistance to participating Canadian firms is an important function of many offices. Trade commissioners make local arrangements for and travel with Canadian trade missions visiting overseas markets. They also seek sources of supply for a wide variety of goods on behalf of Canadian importers.

In developing trade opportunities, Canada's trade commissioners travel extensively in their territories, visit leading industrial and commercial centres and eall on government officials, business men, trade associations and municipal authorities. They establish social contacts with commercial interests, thereby developing goodwill for Canada and Canadian

[^321]products, while creating connections for Canadian exporters and facilitating the collection of trade information. They return to Canada at periodic intervals and make tours of Canadian industrial and commercial centres. Such direct contacts enable them to discuss specific problems with business men and bring into focus the Canadian commercial scene.

In countries where Canada has a diplomatic mission, the Canadian trade office is the commercial division and the trade commissioner has the rank of Minister (Commercial), Minister-Counsellor (Economic), Commercial Counsellor, Commercial Secretary or Assistant Commercial Secretary. When attached to a consulate, he carries the title of Deputy Consul General (Commercial), Consul (Commercial), or Vice-Consul (Commercial), according to his rank, in addition to that of Trade Commissioner or Assistant Trade Commissioner. He may also be the Consul General, in charge of the office. Where trade offices are detached and do not form part of a diplomatic mission, the Trade Commissioner may also be required to undertake consular, immigration and other duties ay the sole representative of Canada.

## CANADIAN FOREIGN TRADE OFFICES ABROAD, AS AT AUG. 25, 1966

Argentina.-Commercial Counsellor, Canadian Embassy, Bartolome Mitre 478, Buenos Aires. Territory includes Paraguay.
Aubtralia. -
Sydney: Commercial Counsellor for Canada, P.O. Box 3952, A.M.P. Building, Circular Quay, Sydney. Territory includes States of New South Wales and Queensland, Capital Territory, Northern Territory, and Dependencies.
Melbourne: Commercial Counsellor for Canada, Mobil Centre, 2 City Road, Melbourne. Territory includes States of Victoria, South Australia, Western Australia and Tasmania.
Canberra: Commercial Counsellor, Office of the High Commissioner for Canada, Commonwealth Avenue, Canberra.
Austria.-Minister-Counsellor (Commercial), Canadian Embassy, P.O. Box 190, Vienna 1/8, Obere Donaustrasse 49/51, Vienna II. Territory includes Albania, Bulgaria, Czechoslovakia, Hungary, Romania and Yugoslavia.
Belerum.-Commercial Counsellor, Canadian Embassy. 35 rue de la Science, Brussels 4. Territory includes Lusembourg, European Economic Community, European Atomic Energy Commumity and European Coal and Steel Community.
Brazil-
Rio de Janeiro: Commercial Counsellor, Canadian Embassy, Caiss Postal 2164-ZC-00, Edificio Metropol, Av. Presidente Wilson 165, Rio de Janeiro.
São Paulo: Consul and Trade Commissioner, Canadian Consulate, Caixa Post 6034, Edificio Alois, Rua 7 de Abril 252, São Paulo.
Britain. -
London: Minister (Commercial), Office of the High Commissioner for Canada, One Grosvenor Square, London W.1.
Liverpool: Canadian Goveroment Trade Commissioner, Martins Bank Bldg., Water Street. Liverpool. Territory includes Midlands and North England.
Glasgow: Canadian Goveroment Trade Commissioner, Cornhill House, 144 West George St., Glasgow C.2, Scotland. Territory includes Scotland.
Belfast: Canadian Government Trade Commissioner, 15-17 Chichester St., Belfast 1, Northern Ireland. Territory includes Northern Ireland.
Ceylon.-Commercial Division, Office of the High Commissioner for Canada, P.O. Bos 1006, 6 Gregory's Road, Cinaamon Gardens, Colombo.
Ceile.-Commercial Counsellor, Canadian Embassy, Casilla 771, Agustinas 1225, Santiago.
Colombia.-Commercial Secretary, Canadian Embassy, Apartado Aereo 8582, Edificio Banco de Los Andes, Carrera 10, No. 16-92, Bogota. Territory includes Ecuador.
Cuba.-Commercial Division, Canadian Embassy, Gaveta 6125, Calle 30, No. 518 esquina 7* Avenida, Miramar, Havana.
Denmark.-Commercial Counselior, Canadian Embassy, Prinsesse Maries Alle 2, Copenhagen V.
Dominican Republic.-Commercial Secretary, Canadian Embassy, Apartado 1393, Edificio Copello 408, Calle El Conde, Santo Domingo. Territory includes Puerto Rico.
France.-Minister-Counsellor (Economic/Commercial), Canadian Embassy. 35 Ave. Montaigue, Paris 8e. Territory includes Algeria and Morocco.

## Grrmany.-

Bad Godesberg: Commercial Counsellor, Canadian Embassy, Kennedy-Allee 35, Bad Godesberg. Territory includes States of Baden-Wuertemberg, Bavaria, Hesse, RhinelandPalatinate and Saar and West Berlin.
Duesseldorf: Consul, Canadian Consulate General, Koenigsallee 82, 4 Duesseldorf 1. Territory includes State of North Rhine-Westphalia.
Hamburg: Consul Geaeral, Canadian Consulate General, Ferdinandstrasse 69, Hamburg. Territory includes City States of Bremen and Hamburg; States of Lower Saxony and Schleswig-Holstein.
Ghana.-Commercial Secretary, Office of the High Commissioner for Canada, P.O. Box 1639, E 115/3 Independence Ave,. Aecra. Territory includes Guinea, Ivory Coast, Liberia, Mali, Mauritania, Togo and Upper Volta.
Grepce.-Commercial Counsellor, Canadian Embassy, 31 Vassilissis Sophias Ave., Athens 138. Territory includes Turkey.
Goatemala.-Commercial Secretary, Canadian Embassy, P.O. Box 400, 5a Avenida 11-70, Zone I, Guatemala City, C.A. Territory includes Costa Rica, El Salvador, Honduras, Nicaragua, Panama and Canal Zone.
Hong Kong.-Senior Canadian Government Trade Commissioner, P.O. Box 126, P\& O Building, 21-23, Des Voeux Road, Central Hong Kong. Territory includes Cambodia, Communist China, Laos, Viet-Nam and Macao.
Indra.-Commercial Counsellor for Canada, P.O. Box 11, 13 Golf Links Road, New Delhi 1. Territory includes Bhutan, Ceylon, Nepal and Sikkim.
Iran.-Commercial Counsellor, Canadian Embassy, P.O. Box 1610, Bezrouke Bldg., Corner of Takht Jamshid Ave, and Forsat St., Tehran.
Irbland.-Commercial Secretary for Canada, 66 Upper O'Connell St., Dublin.
Yerami.-Commercial Secretary, Canadian Embassy, P.O. Box 20140, 84 Hahashmonaim St., Tel Aviv.
Italy.-
Rome: Commercial Counsellor, Canadian Embassy, Via G.B. De Rossi 27. Territory includes Libya and Malta.
Milan: Consul General and Trade Commissioner, Cansdian Consulate General, C.P. 3977, Via Pirelli 19. Territory includes Provinces of Emilia-Romagna, Lombardia, Piedimonte, Trentino-Alto Adige, Veneto, Liguria, Trieste, Valle D'Aosta and Friuli-Venezia.
Jamaca.-Commerciai Secretary, Office of the High Commissioner for Canada, P.O. Box 225, 32 Duke St. (corner Duke and Barry Sts.), Kingston. Territory jnctudes Bahamas and British Honduras.
Japan.-Minister (Commercial), Canadian Embassy, c/o Akasaka Post Office 3-38. Akasaka, 7-Chome, Minato-ku, Tokyo. Territory includes Korea and Okinawa.
Lebanon.-Commercial Counsellor, Canadian Embassy, Botte Postale 2300, Alpha Building, Rue Clemenceau, Beirut. Territory includes Iraq, Jordan, Persian Gulf area, Saudi Arabia and Syria.
Malaygia.-Commercial Counsellor, Office of the High Commissioner for Canada, P.O. Box 990, A.I.A. Building, Ampang Road, Kusla Lumpur. Territory includes Brunei and Burma.

Mexico.-Commercial Counsellor, Canadian Embassy, Apartado Postal 5-364, Melchor Ocampo 463, Mexico 5, D.F.
Netherlands.-Commercial Counsellor, Canadian Embassy, Sopbialaan 5-7, The Hague.
New Zealand.-Commercial Counsellor, Office of the High Commissioner for Canada, P.O. Boz 12-049, ICI Building, Molesworth Street, Wellington. Territory includes Fiji, Tahiti, Tonga and Western Samoa.
Nigeria.-Commercial Secretary, Office of the High Commissioner for Canada, P.O. Box 851, Barclays Bank Building, 40 Marina Rd., Lagos. Territory includes Dahomey, Gambia, Niger, Senegal and Sierra Leone.
Nonway.-Commercial Counsellor, Canadian Embassy, Fridtjof Nansens plass 5, Oslo 1. Territory includes Iceland.

## Pakigtan.-

Rawalpindi; Commercial Secretary, Office of the High Commissioner for Canada, 17A Harley St. Annes. Territory includes Afghanistan. Karachi: Commercial Secretary for Canada, P.O. Box 3703, Hotel Metropole, Victoria Rd.
Perd.-Commercial Secretary, Canadian Embassy, Casilla 1212, Edificio El Pacifico, Corner Avenida Arequipa and Plaza Washington, Lima. Territory includes Bolivia.
Philippines.-Consul General and Trade Commissioner, Canadian Consulate General, P.O. Box 1825, L \& S Buidding, 1414 Roxas Boulevard, Manila. Territory includes Republic of China (Taiwan).

Portugal.-Commercial Counsellor, Canadian Embassy, Rua Marques de Fronteira, No. 8-4ㅁ ${ }^{\circ}$, Lisbon. Territory includes Angola, Azores, Cape Verde Islands, Madeira and Portuguese Guinea.
Singapore--Commercial Counsellor, Office of the High Commissioner for Canada, P.O. Box 845, American International Building, Robinson Road and Telegraph St. Territory includes Indonesia and Thailand.
Sodth Aprica.-
Johannesburg: Canadian Goveroment Trade Commissioner, P.O. Box 715, Mobil House, Corner Rissik and De Villiers Sts., Johannesburg. Territory includes States of Natal, Orange Free State and Transvaal, and Angola, Botswana, Lesotho, Malagasy, Mauritius, Mozambique and Reunion.
Cape Town: Canadian Government Trade Commissioner, P.O. Box 683, Airican Life Centre, St. George's St. Territory includes Cape Province, and St. Helena and South West Africa,
SpanN.-Commercial Counsellor, Canadian Embassy, Edificio España, Avenida de Jose Antonio 88, Madrid. Territory includes Balearic Islands, Canary Islands, Gibraltar, Rio Muni and Spanish Sahara.
Swedrn.-Commercial Counsellor, Canadian Embassy, P.O. Box 14042, Skeppsbron 24, Stockholm. Territory includes Finland.
Switzerland.-Commercial Counsellor, Canadian Embassy, Kirchenfeldstrasse 88, Berne. Territory includes Tunisia.
Trinidad and Tobago.-Commercial Counsellor, Office of the High Commissioner for Canada, P.O. Box 1246, Colonial Bldg., 72 South Quay, Port-of-Spain. Territory includes Barbados, Leeward and Windward Islands, Guyana, French Guiana, Surinam, Guadeloupe and Martinique.
Union of Soviet Sochalist Repoblics.-Commercial Secretary, Canadian Embassy, 23 Starokonyushenny Pereulok, Moscow.
Untted Arab Republuc.-Commercial Division, Canadian Embassy, Kasr el Doubara Post Office, 6 Sharia Rouston Pasha, Garden City, Cairo. Territory includes Sudan and Ethiopia.

## United States.-

Washington: Commercial Counsellor, Canadian Embassy, 1746 Massachusetts Ave., N.W., Washington, D.C. 20036. Territory includes District of Columbia.
New York City: Deputy Consul General (Commercial), Canadian Consulate General, 680 Fifth Ave., New York, N. Y. 10019 . Territory includes States of Connecticut, New Jersey (eleven northern counties) and New York, and Bermuda.
Boston: Consul and Senior Trade Commissioner, Canadian Consulate General, 500 Boylston St., Boston, Mass. 02116. Territory includes States of Maine, Massachusetts, New Hampshire, Rhode Island and Vermont.
Chicago: Consul and Senior Trade Commissioner, Canadian Consulate General, 310 South Michigan Ave., Chicago, Ill. 60604. Territory includes States of Illinois, North Dakota, South Dakota, Minnesota, Wisconsin, Indiana, Lowa, Kansas, Kentucky, Missouri and Nebraska.
Cleveland: Consul and Senior Trade Commissioner, Canadian Consulate, Illuminating Building, 55 Public Square, Cleveland, Ohio 44113. Territory includes State of Ohio.
Detroit: Consul and Trade Commissioner, Canadian Consulate, 1139 Penobscot Building, Detroit, Mich. 48226. Territory includes State of Michigan.
Los Angeles: Consul and Senior Trade Commissioner, Canadian Consulate General, 510 West Sisth St., Los Angeles, Cal. 90014. Territory includes States of California (ten southern counties), Arizona and New Mesico and Clark County in Nevada.
New Orleans: Consul and Trade Commissioner, Canadian Consulate General, 225 Baronne St., New Orleans, La. 70112. Territory includes States of Louisiana, Texas, Oklahoma, Arkansas, Mississippi, Tennessee, Alabama, North Carolina, South Carolina, Georgia and Florida.
Philadelphia: Consul and Trade Commissioner, Canadian Consulate, 3 Penn Center Plaza, Philadelphia, Pa. 19102. Territory includes States of Delaware, Maryland, New Jersey (nine southern counties), Pennsylvania, Virginia and West Virginia.
San Francisco: Consul and Trade Commissioner, Canadian Consulate General, 333 Montgomery St., San Francisco, Cal. 94104. Territory includes States of California (except the ten southern counties), Wyoming, Nevada (except Clark County), Utah, Colorado and Hawaii.
Seattle: Consul General, Canadian Consulate General, 1308 Tower Building, Seventh Avenue at Olive Way, Seattle, Wash. 98101. Territory includes States of Oregon, Idaho, Washington, Montana and Alaska.
Uruguay.-Commercial Counsellor, Canadian Embassy, Casilla Postal 852, No. 1409 Avenida Agraciada Piso $7^{\circ}$ Montevideo. Territory includes Falkland Isiands.
Venezulla.-Commercial Secretary, Canadian Embassy, Apartado del Este 11452, Avenida La
Estancia No. 10, Ciudad Comercial Tamanaco, Caracas. Territory includes Netherlands Antilles.

Trade Fairs and Missions Branch.-It is the function of this Branch to organize and co-ordinate the Department's annual program of participation in trade fairs abroad and of outgoing and incoming trade missions. The Trade Fairs Abroad Division and the Trade Missions Division co-ordinate departmental activity in implementing these promotion programs and in organizing the trade fair exhibits and trade missions scheduled during the year. The Branch Director acts as chairman of the Departmental committees that select the program and the Division Chiefs preside over working committees appointed to handle detailed planning. The Branch also provides liaison with Trade Commissioner Service posts abroad, trade associations in Canada, provincial governments and other federal departments or agencies in the development of trade promotion programs.

In 1966 the Department of Trade and Commerce sponsored exhibits in 45 trade fairs abroad in such key markets as the United States, England, West Germany, France, Russia, Yugoslavia, Spain, Italy and Scotland. The products of hundreds of Canadian manufacturers were exhibited to potential foreign buyers numbering more than $15,000,000$. The 26 trade missions organized in 1966 included 10 teams of Canadian business men sent abroad to study special markets in Europe, the United States, Latin America, Australia, New Zealand, Southeast Asis and the Mediterranean. Sixteen groups of business visitors were brought to Canada from Europe, Australia, the United States, Latin America, Japan and Malaysia.

Trade Policy Service.-The Office of Trade Relations and the Office of Commodity Trade Policy, established in September 1966, forms the Department's Trade Policy Service.

The main function of the Office of Trade Relations is to safeguard and improve terms of access for Canadian exporters in foreiga markets. The Office is concerned with the conduct of Canadian trade relations with other countries, including the negotiation and administration of trade agreements and Canadian participation in international conferences and meetings dealing with trade and economic matters. It endeavours to find practical solutions for tariff problems and other difficulties encountered in foreign markets by Canadian exporters and, as a service to exporters, provides expert information, advice and assistance on foreign tarifis, import and exchange controls, documentation requirements and other foreign governmental regulations affecting Canada's trade. The Office also has responsibilities in relation to the export financing facilities available for the development of exports of Canadian capital equipment. The Area Divisions of the Office-Commonwealth, United States, European, Latin American and Asia and Middle East-are the central points of contact between Canada's trade commissioners abroad and the Department in Ottawa.

The Office of Commodity Trade Policy has two main areas of interest: it makes detailed commodity studies to ensure that the development of Canadian trade and related policies reflects the key role of export in economy, and it has the responsibility for international commodity policy work, including the negotiation of international commodity arrangements and related activities.

Transportation and Trade Services Branch.-The functions of this Branch relate to freight transportation matters, export and import controls, trade directories, the administration of the six Regional Offices and the provision of general guidance to firms seeking entry into the export field. These activities are conducted by three Divisions: the Transportation Division is concerned primarily with industrial transportation from the export shipper's point of view, with policies and practices affecting the movement of international trade, and with developments and trends in shipping services and freight rates; the Export and Import Permits Division administers the controls established under the Export and Import Permits Act; and the Regional Offices and Trade Services Division administers the Department's Regional Offices and compiles the Exporters' Directory, a confidential directory of firms engaged in or seriously interested in exporting commodities or services.

Commodity Branches.-The Commodities and Industries Services include three commodity branches-the Agriculture and Fisheries Branch, the Industrial Materials Branch and the Manufacturing Industries and Engineering Branch. These branches provide the main link between industry and the Department; they maintain close contact with the business community to be familiar with production and supply conditions in Canada. Emphasis is placed on the search for products and services, the sale of which can be promoted abroad.

The Agriculture and Fisheries Branch is organized into five divisions to cover fisheries, grain, livestock and animal products, plant products, and commodity arrangements and markets development. The Industrial Materials Branch is composed of three divisions to handle chemicals, forest products and metals and minerals. The Manufacturing Industries and Engineering Branch is organized into four divisions responsible for appliances and commercial machinery, electrical and electronic equipment, mechanical equipment and engineering, and textiles and consumer goods. These divisions are staffed by commodity officers who are specialists in their fields and are available to assist Canadian business men.

Commodity officers visit manufacturing plants and production facilities, attend and address meetings of business associations and study groups and prepare product reports and market surveys. They constitute the principal channel through which information on Canadian products and services reaches Canadian Trade Commissioners abroad and a channel through which information on sales opportunities in countries abroad is disseninated to industry in Canada. They continually analyse reports from Trade Commissioners abroad to determine potential markets for commodities and services of interest to Canadian industry. In co-operation with the Canadian Government Exhibition Commission, they assist in making arrangements for the display of commodities in trade fairs throughout the world to introduce Canadian products into new markets. They organize and accompany departmental trade missions and serve as delegates to international commodity conferences to study world market conditions and to consider corrective adjustments.

Trade Publicity Branch.-The function of the Trade Publicity Branch is to stimulate interest in Canadian products in foreign markets and to encourage Canadian manufacturers to look beyond domestic horizons. Advertising, public relations and publicity techniques are used in varying combinations to accomplish these objectives. Advertising, periodicals, booklets, brochures and other printed matter are used in direct support of trade fairs and missions; news releases, radio tape recordings and television film clips are employed to inform Canadians of foreign trade opportunities and successes.

The Branch is compnsed of an Operations Group and five Divisions. The Operations Group plans and executes the major activities concerning trade fairs and in-store promotions. Working closely with that Group is the Editorial Division which employs writers and editors, and the Art Division which is responsible for design, production and technical work. The Media Relations Division prepares and distributes press releases, articles, photographs, speeches and background material to newspapers, radio and television stations, magazines and the Canadian trade press. It provides publicity material for distribution abroad and produces and distributes films and television clips to promote interest in Canada as a supplier of many commodities. The Canada Courier Division produces Canada Courier, an illustrated, eight-page international trade promotion newspaper, published on behalf of Canadian exporters to promote products and services abroad. It has a circulation of 97,000 and is distributed in more than 100 countries. The English edition is published six times a year and the French, Spanish and German editions twice annually. The Foreign Trade Division publishes the magazine Foreign Trade, fortnightly, and Commerce exterieur, monthly. These journals, designed to help Canadian exporters, contain information on overseas markets, tariffs, exchange rates and other pertinent trade data.

Canadian Government Exhibition Commission.-The Commission organizes, designs, produces and administers all Canadian exhibits at fairs and exhibitions abroad in which the Canadian Government participates and also advises private exhibitors and their agents on the best means of displaying Canadian products at trade fairs. It acts as a central service agency for all government departments and agencies in the preparation of conventional exhibits and displays for showing in Canada and is responsible for international fairs and exhibitions held in Canada that are financed and sponsored by the Government of Canada.

Canadian purebred dairy cows received considerable attention at two Mexican livestock shows held late in 1966. The exhibit was sponsored by the Department of Trade and Commerce for the purpose of promoting exports and followed similar exhibits in France and Yugoslavia.


Canadian Government Travel Bureau.-The Canadian Government Travel Bureau is in operation to encourage tourist travel to Canada and to co-ordinate the tourist promotion conducted by the provinces, transportation companies and national, regional and local tourist associations. The Bureau undertakes extensive tourist advertising campaigns abroad, provides tourist publicity material for foreign newspapers, magazines, radio and television outlets, and annually handles about $1,500,000$ inquiries from potential visitors to Canada. Tourist offices are operated in New York, Chicago, San Francisco, Minneapolis, Los Angeles, Boston, Philadelphia, Cincinnati, Rochester, Indianapolis, Cleveland, Detroit and Seattle in the United States; the Bureau also has representation in London, Paris, Frankfurt, Amsterdam, Mexico City, Tokyo and Sydney, Australia.

Export Credits Insurance Corporation.-This Corporation was established under the provisions of the Export Credits Insurance Act, 1944 (RSC 1952, c. 105, as amended) and is administered by a Board of Directors that includes the Deputy Minister of Trade and Commerce and the Deputy Minister of Finance. It operates in two fields-export credits insurance and long-term export financing.

Insurance is available to all persons or corporations carrying on business in Canada to cover export sales made on customary credit terms. It provides protection against risks involved in the export, manufacture, treatment or distribution of goods, or the rendering of engineering, construction, technical or similar services. The main risks covered include: insolvency or protracted default on the part of the buyer; exchange restrictions in the
buyer's country preventing the transfer of funds to Canada; cancellation of an import licence or an export licence or the imposition of restrictions on the import or export of goods not previously subject to restrictions; the occurrence of war between the buyer's country and Canada, or of war, revolution, etc., in the buyer's country. The insurance is available under three main classifications-general commodities, capital goods and services. General commodities policies cover a policyholder's export sales to all countries except the United States for a period of one year, and are renewable. Two types are available: the contracts policy, which insures an exporter against loss from the time he books an order until payment is received; or the shipments policy, obtainable at lower rates of premium and covering the exporter from the time of shipment until payment is received. Insurance of capital goods offers protection to exporters dealing in plant equipment, heavy machinery, etc., where extended credit up to a maximum of five years may be necessary. Specific policies are issued for transactions involving capital goods but the general terms and conditions are the same as those applicable to policies for general commodities. Specific policies are also issued to cover engineering, construction, technical or similar service contracts entered into between Canadian firms and persons in foreign countries who have agreed to purchase such services. The Corporation may also extend unconditional guarantees to Canadian chartered banks which will agree to provide non-recourse financing to insured exporters who have sold capital equipment abroad on medium-term credit.

The Corporation insures exporters on a co-insurance basis, the exporter retaining a small percentage of the risk involved, and the same principle operates in the distribution of recoveries obtained after the payment of a claim. When, in the opinion of the Minister of Trade and Commerce, a proposed transaction is in the national interest but would impose upon the Corporation a liability for a term or in an amount in excess of that normally undertaken, the Corporation may be authorized by the Governor in Council to enter into a contract of insurance at the Government's risk.

The Corporation also administers direct financing facilities available under the Act in cases where export sales involving capital goods are of such a nature as to warrant credit terms in excess of five years. The Corporation, when authorized by the Governor in Council, buys the promissory notes or other negotiable instruments of the foreign purchaser.

## Section 2.-The Development of Tariffs

Limitations of space in the Year Book have made it necessary, in regard to tarifis, to adopt the policy of confining any detail regarding commodities and countries to tariff relationships in force at present and to summarize as much as possible historical data and details of preceding tariffs.

## Subsection 1,-The Canadian Tariff Structure*

The Canadian Tariff consists, in the main, of three sets of tariff rates-British Preferential, Most-Favoured-Nation, and General.

British Preferential Tariff rates are, with some exceptions, the lowest rates. They are applied to imported commodities from British countries, with the exception of Hong Kong, when conveyed without trans-shipment from a port of any British country enjoying the benefits of the British Preferential Tariff into a port of Canada. Some Commonwealth countries have trade agreements with Canada which provide for rates of duty, on certain specified goods, lower than the British Preferential rates.

[^322]Most-Favoured-Nation rates are usually higher than the British Preferential rates and lower than the General Tariff rates. They are applied to commodities imported from countries with which Canada has trade agreements. These rates would apply to British countries when they are lower than the British Preferential Tariff rates. The most important trade agreement concerning the effective rates applied to goods imported from countries entitled to Most-Favoured-Nation rates is the General Agreement on Tariffs and Trade (GATT).

General Tariff rates are applied to goods imported from the few countries with which Canada has not made trade agreements.

There are numerous goods which are duty free under the British Preferential Tariff, or under both the British Preferential and Most-Favoured-Nation Tariffs, or under all Tariffs.

Valuation.-In general, the Customs Act provides that the value for duty of imported goods shall be the fair market value of like goods as established in the home market of the exporter at the time when and place from which the goods are shipped directly to Canada when sold " $(a)$ to purchasers located at that place with whom the vendor deals at arm's length and who are at the same or substantially the same trade level as the importer, and (b) in the same or substantially the same quantities for home consumption in the ordinary course of trade under competitive conditions" In cases where like goods are not sold for home consumption but similar goods are sold, the value for duty shall be the cost of production of the goods imported plus an amount for gross profit equal in percentage to that earned on the sale of similar goods in the country of export. The value for duty ordinarily may not be less than the amount for which the goods were sold to the purchaser in Canada, exclusive of all charges thereon after their shipment from the country of export. Internal taxes in the country of export (when not incurred on exported goods), the cost of shipping goods to Canada and similar charges do not normally form part of the value for duty. There are, of course, further provisions for determining value for duty under the Act.

Dumping.-Sect. 6 of the Customs Tariff provides that when the actual selling price of goods being imported is less than the fair market value and the goods are of a class or kind made or produced in Canada, a special or dumping duty shall be collected. This duty is to be equal to the difference between the actual selling price and the fair market value of the goods, except that it may not be more than 50 p.c. ad valorem. These provisions are designed to offiset the advantage foreign exporters may achieve by exporting to Canada at less than the going prices in the country of export.

Drawback.-There are provisions in the Customs and Excise Tax Acte for the repayment of a portion of the duty, sales and/or excise taxes paid on imported goods used in the manufacture of products later exported. The purpose of these drawbacks (as these repayments are called) is to assist Canadian manufacturers to compete in foreign markets with foreign producers of similar goods. A second class of drawback, known as "home consumption' drawbacks, is provided for under the Customs Act and the Customs Tariff Act and applies to imported materials and/or parts used in the production of specified goods to be consumed in Canada.

The Tariff Board.-The organization and functions of the Tariff Board are described at p. 140 of this volume.

## Subsection 2.-Tariff and Trade Arrangements with Other Countries as at Sept. 15, 1966

Canada's tariff arrangements with other countries fall into three main categories: trade agreements with a number of Commonwealth countries; the General Agreement on Tariffs and Trade (GATT); and other agreements and arrangements.

The Commonwealth countries with which Canada has trade agreements providing for exchange of preferential rates are: Australia, Bahamas, Barbados, Bermuda, Guyana, British Honduras, Jamaica, the Leeward and Windward Islands, Trinidad and Tobago, New Zealand, Britain and its dependent territories and the members of the former Federation of Rhodesia and Nyasaland (Malawi, Rhodesia and Zambia). Canada also exchanges preferences with Ceylon, Cyprus, Malaysia, Malta and Sierra Leone and accords preferences to India. Pakistan, Ghana, Nigeria, Kenya, Tanzania and Uganda. Many of these countries are also members of the GATT. In addition, Canada has trade agreements with Ireland and South Africa under which preferences are exchanged.

Canada signed the Protocol of Provisional Application of the General Agreement on Tariffs and Trade on Oct. 30, 1947, and brought the General Agreement into force on Jan. 1, 1948. The Agreement provides for scheduled tariff concessions and the exchange of most-favoured-nation treatment among the contracting parties, and lays down rules and regulations to govern the conduct of international trade.

At the beginning of September 1966, there were 70 full members in the GATT. These countries and the effective dates of their accession are indicated in the following list. In addition, Argentina, Iceland, Tunisia and the United Arab Republic were provisional members. The GATT is applied on a de facto basis to a number of newly independent states-Algeria, Democratic Republic of Congo, Maldive Islands, Mali, Singapore and Zambia-pending decisions as to their future commercial policies; Cambodia and Poland, although not members, participate in the work of GATT.

Trade relations between Canada and a number of other countries are governed by trade agreements of various kinds, by exchange of most-favoured-nation treatment under Orders in Council, by continuation to newly independent states of the same treatment originally negotiated with the countries previously responsible for their commercial relations, and by even less formal arrangements.

# Tariff and Trade Arrangements with Commonwealth Countries as at Sept. 15, 1906 

| Country | Acreement | Tariff Treatment |
| :---: | :---: | :---: |
| Autralia. | Trade Agreement signed Feb. 12, 1960 ; in force June 30, 1960. <br> GATT effective Jan. 1, 1948. | Agreement includes schedules of tariff rates and margins and exchange of British preferential rates on items not scheduled. May be terminated on six months notice. |
| Britain........................ | Trade Agreement aigned Feb. 23. 1937, effective Sept. 1, 1937; modified by exehanges of letters Nov. 16, 1938 and Oct. $20,1947$. <br> GATT effective Jan. 1, 1948. | Various concessions are granted by each conntry including excbange of preferential tariff rates. The Agreement (as modified) includes provigions relating to the Colonies, Dependencien and Trusteeships. |
| Cerlon. | Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective July 29, 1948. | Canada and Ceylon exchange preferentiad tariff treatment. |
| Commonwealth Caribbean (Babamag, Barbados, Bermuda, British Honduras, the Leeward Iglands, and tre Windward Iglands). | Canada-British West Indies Trade Agreement gigned July $\mathbf{6}, 1925$, in force Apr. 30, 1927; Canadian notice of termination of Nov. 23, 1938, was replaced by notice of Dec. 27, 1939, which continued the Agreement. Protocol signed July 8, 1966 continues ad interim and smends Part I of the Canada-Britigh Weat Indies Trade Agreement; terminates Part II of that Agreement and incorporates a number of additional provisions. Barbados, Bermuda, Britigh Honduras and the Leeward and the Windward GATT. | Tbe parties exchange specified tariff preferences. |

# Tarifi and Trade Arrangements Fith Commonwealth Countries as at Sept. 15, 1846-continued 

| Country | Agreement | Tarif Treatment |
| :---: | :---: | :---: |
| Cyprus........................ | GATT effective Aug. 16, 1960. | Canads exchanges preferential tariff treatment with Cyprus. |
| Gambia. | GATT effective Feb. 18, 1965. | Canada and Gambia exchange preferential tarif treatment. |
| Gbans......................... | Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective Oct. 18, 1957. | Canada accords British preferential treatment to Ghana, (except on cocos beans). Ghans exteuds most-fs-voured-nation treatment to Canada. |
| Gutana....................... | Relations are based on the CansdaWest Indies Trade Agreement and protocol thereto (see Commonwealth Caribbean). | The parties exchange specified tariff preferences. |
| India. | Since 1897 Canada has unitaterally ac corded British preferential treatment without contractual obligation. GATT effective July 8, 1948. | Canada accords British preferential treatment to Indis. India extends most-favoured-nation treatment to Canada. |
| Jamatca, | Relations are based on Canada-West Indies Trade Agreement and protocol thereto (see Commonwealth Caribbean). <br> GATT effective Aug. 6, 1962. | The parties exchange specified tariff preferences. |
| Kenya.... | ATT effective Deo. 12, 1963. | Canads secords British preferential tariff treatment to Kenya. Kenya extends most-favoured-nation treatment to Canada. |
| Malami. | Malawi and Canada observe the terms of the 1958 Trade Agreement between Canada and the former Federation of Rhodesia and Nyasaland. | Canada exchangea preferential tariff treatment with Malawi. |
| MaLatila....................... | Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective Sept. 16, 1963. | Canada and Malaysia exchange preferential tariff treatment. |
| Maita.................................. | Relations continue to be governed by Trade Agreement of 1937 with Britain. GATT effective Sept. 16, 1964. | Canada exchanges British preferential treatment with Malta. |
| New Zealand................. | Trade Agreement signed Apr. 23, 1932; in fores May 24, 1932. GATT effective July 26, 1948. | The parties exchange specific preferences on scheduled goods and reciprocally grant British preferential rates on items not acheduled. May be terminated on six montbs notice. |
| Nigeria, Feperation or....... | Relations continue to be governed by Trade Agreement of 1987 with Britain. GATT effective Oct. 1, 1960. | Canada accords British preferential treatment to Nigeria. Nigeria extends most-fsvoured-nation treatment to Сапвds. |
| Paklitan....................... | Canada unilaterally accords Britiah preferential treatment without contrac. tual obligation. <br> GATT effective July 30, 1948. | Canada accords British preferential treatment to Pakistan. <br> Exchange of moat-favoured-nation trestment. |
| Rhodngta. . . . . . . . . . . . . . . . | Canads does not recognize the present Government of Rhodesia. | Efective Nov. 11, 1965, Canada withdrew preferential treatment from Rbodesian zoods, making them liable to the geveral tariff rate. <br> Effective Dec. 31, 1965, Rhodesis withdrew preferential treatment from Canadian goods and required that they pay the most-favoured-nation rate. |

Tariff and Trade Arrangements with Commonwealth Countries as at Sept. 15, 1566-concluded

| Country | Agreement | Tariff Treatment |
| :---: | :---: | :---: |
| Sierra Leone.................. | GATT effective Apr. 27, 1961. | Exchange of most-favoured-nation treatment. Canads accords British prejerential treatment to Sierrs Leone. Sierra Leone extends most-javourednation tariff treatment to Canada. |
| Singapore.. | GATT effective de facto Aug. 9. 1965, pending Singapore's decision on commercial policy. <br> GATT effective Aug. 31, 1962. | Canada and Singapore exchange preferential treatment. |
| Trindad and Tobago......... | Relations are based on Canada-West Indies Trade Agreement and protocol thereto (see Commonwealth Caribbean). <br> GATT effective Aug. 31, 1962. | The parties exchange specifed tariff prelerences. |
| Uoanda. | ATT effective Oct. 9, 1962. | Canada accords British preferential tariff treatment to Uganda. Uganda extends most-favoured-nation tariff treatment to Canada. |
| United Republic op Tanzania. | GATT effective for Tanganyika Dec. 9, \$961 and extended to Zanzibar upon formation of United Republic Apr. 23, 1964. | Canada accords British preferential tarift treatment to the United Repablic of Tanzania. Tanzania extends most-lavoured-nation tariff treatment to Canada. |
| Zambia......................... | GATT has de facto application tor Zambia for a two-year period effective Oct. 24, 1864. | Exchange of most-favoured-nation treatment. Canada aecorda Britíeb preferential treatment to Zambia. Zambia extends most-favoured-nation tariff treatment to Canada. |

## Tariff and Trade Arrangements with Non-Commonwealth Countries as at Sept. 15, 1366

Country

Beneldx (Belgidm-
Netherlands-Luxtmbourg
Customs Union).

Trade Agreament signed Oot. 2, 1941; provisionally in foree Noy. 15, 1941. siona? y.

GATT effective Oct. 19, 1951.
onvention of Commerce with Belgiuming Belgian colonies) entered into effect Oct. 22 1924.
GATT effective Jan. 1, 1948.
(Soe Belgium-Luxembourg and Netber lands.)

## Tariff and Trade Arrangements with Non-Commonwealth Countries as at <br> Sept. 15, 1966 -continued

| Country | Agreement | Tariff Trestment |
| :---: | :---: | :---: |
| BoLtvis. | Order in Council of Juy 20, 1935, sccepted Articie 15 of U.K.-Bolivia Treaty of Commerce of Aug. 1, 1911. | Exchange of most-favoured-nation treatment. May be terminated on one years notice. |
| Brazti........................ | Trade Agreement signed Oct. 17, 1941; provisionally in force from date of signing and definitively on Apr. 16, 1943. GATT effective July 31, 1948. | Exchange of most-favoured-nstion treatment. |
| Bjoloaria. | Trade Agreement signed Oct. 8, 1963; provisionally in force from date of signing. | Exchange of most-favoured-nation treat. ment and undertakiog by Bulgaria to purchase a minimum of 300,000 metric tons of whent or equivalent in flour during the three years validity of the Agreement. |
| Bdrma......................... | GATT effective July 29, 1948. | Exchange of most-favoured-uation treatment. |
| Burundt...................... | GATT effective July 1, 1962. | Canada grants most-favoured-nation treatment. |
| Cambodia.. | Franco-Cauadian Trade Agreement of 1933 applied to Cambodis. <br> Although not a full member, Cambodia takes part in the work of GATT under a special arrangement. | Since the crention of Cambodia ag an independent state in 1955, Canads has contipued to grant moot-havourednation treatment. |
| Cambroon. . . . . . . . . . . . . . . | Franco-Canadian Trade Agreement of 1033 applied to Cameroon. GATT effective Nov. 28, 1960. | Exchange of most-lavoured-nation treatment. |
| Central Afracan Repubuc. . | Franco-Canadian Trade Agreement of 1033 applied to Central Airican Republic. <br> GATT effective Aug. 14, 1960. | Exchange of most-favoured-nation treatment. |
| Chad......................... | Franco-Canadian Trade Agreement of 1933 applied to Ched. GATT effective Ang. 11, 1960. | Exchange of most-favoured-nation treatment. |
| Chile | Trade Agreement signed Sept. 10, 1941; provisionslly in force Oct. 15, 1941, and definitively on Oct. 29, 1943. GATT effective Mar. 16, 1948. | Exchange of most-favoured-nation treatment. |
| China. | Modus vivendi signed Sept. 26, 1946. Covers the territory of China and Taiwan. | Exchange of most-favoured-nation treatment. May be terminated on three months notice. |
| Colombia. | Treaty of Commerce with Britain of Feb. 16, 1866, appliea to Canads. Modified by protocol of Aug. 20, 1912, and exchange of notes Dec. 30, 1938. | Exchange of most-favoured-nation treatment. May be terminated on three months notice. |
| Congo (Brazzaville)......... | Franco-Cazadian Trade Agreement of 1983 applies to Congo (Brazzaville). GATT effective Aug. 15, 1960. | Exchange of most-favoured-ngtion treatment. |
| Congo (Leopoldville). | Belgo-Canadian Convention of Commerce of 1924 spplied to Congo (Leopoldville). <br> Maintsins a de facto spplication of the GATT. | Since the Congo's independence in 1960 , Canada has continued to grant most-favoured-nation treatment, |
| Coeta Rica. | Modus vivendi signed Nov. 18, 1950; brought into force Jan. 26, 1051. | Exchange of most-favoured-nation treatment. May be terminated on three months notice. |
| Cuba,......................... | GATT effective Jan. 1, 1848. | Exchange of mobt-favorred-nation treatment. |

# Tarifi and Trade Arrangements with Non-Commonwealth Countries as at Sept. 15, 1956-continued 

| Country | Agreement | Tariff Treatment |
| :---: | :---: | :---: |
| Czachostovakia. | Convention of Commerce signed Mar. 15 , 1928; in force Nov. 14, 1928. GATT effective May 21, 1948. | Exchange of most-isvoured-nation treatment. May be terminated on one years notice. |
| Daвомвт...................... | Franco-Canadian Trade Agreement of 1933 applied to Dahomey. GATT effective Aug. 1, 1960. | Exchange of most-favoured-nation treatment. |
| Denmare (incloding Greenland). | Treaties of Peace and Commerce witb Britain of Feb. 13, 1660 and July 11, 1670. apply to Canada. GATT effective May 28, 1950. | Exchange of most-favoured-nation treatment. Declarstion of May 9, 1912 provides means lor separate termination by Dominions on one years notice. |
| Domincan Repurlic.......... | Trade Agreement signed Mar. 8, 1940; in force Jan. 22, 1941. <br> GATT effective May 19, 1950. | Exchange of most-favoured-nation treatment including scheduled concessions. |
| Ectador. | Modus vivendi signed Nov. 10, 1950: in force Dec. 1, 1950. | Exchange of moet-favoured-nation treatment. May be terminated on three monthe notice. |
| Egrpt.......................... | (See United Arab Republic.) |  |
| El Salvador................. | Exchange of notea of Nov. 2, 1937; in force Nov. 17, 1937. | Exebange of most-favoured-nation treatment. May be terminated on four montbe notice. |
| Ethiopin. | Exchange of notes effective June 3, 1955. | Exchange of most-favoured-nation treatment. May be terminated on three montha notice. |
| Finland. . . . . . . . . . . . . . . . . | Exchange of notes of Nov. 13-17, 1948; effective Nov. 17, 1948. GATT effective May 25, 1950. | Exchange of most-favoured-nation treatment. May be terminated on three months notice. |
| France and Frenct overseas territoriza. | Trade Agreement signed May 12, 1933; in force June 10, 1933. Exchange of notes of Sept. 29, 1934, and additional protocol of Feb. 26, 1935. <br> GATT effective Jan. 1, 1848. | Exchange of most-favoured-nation treatment including scbeduled concessions. May be terminated on three montbs notice. |
| Gabon......................... | Franco-Canadian Trade Agreement of 1933 applied to Gabon. GATT effective Aug. 17, 1960. | Exchange of most-fivoured-nation trestment. |
| Grrmany, Federal Rapoblic or. | GATT eliective Oct. 1, 1951. | Exchange of most-favoured-nation treatment. |
| Gretce.. | Modus vivendi by exchange of notes of Jely 24-28, 1947. <br> GATT effective Mar. 1, 1950. | Exchange of most-favoured-nation treatment. May be terminated on three months notice. |
| Greenland. | (See Denmark.) |  |
| Gdatemaha................... | Trade Agreement signed Sept. 28, 1937; in force Jan. 14, 1939. | Exchange of most-favoured-nation treatment. May be terminated on six monthe notice. |
| Guinea........................ | Franco-Canadian Trade Agreement of 1933 applied to Guines. | Since the creation of Guines as an independent state in 1958, Canada has continued to grant most-favoured-nation treatment. |
| Hairt, ........................... | Trade Agreement signed Apr. 23, 1937; in iorce Jan. 10, 1939. <br> GATT effective Jan, I, 1950. | Exchange of most-favoured-nation treatment. |
| Hondurns.,................... | $\left\|\begin{array}{c}\text { Exchange of Notes aigued July J1, } 1956, \\ \text { effective July 18, } \\ \text { Honduras Sept. } 8,1956 \text {. } \\ \text { Ratified in }\end{array}\right\|$ | Exchange of most-favoured-nation treatment. May be terminated on three month notice. |

# Tarlif and Trade Arrangements with Non-Commonwealth Countries as at Sept. 15, 1966-continued 

| Country | Agreement | Tariff Treatment |
| :---: | :---: | :---: |
| HUnGAbt.................... | Trade Agreement signed June 11, 1964; provisionally in force from date of signing. | Exchange of most-favoured-ustion treatment and undertaking by Hungary to purchase a minimum of $\$ 24.000,000$ of wheat and other unspecified products during the three years validity of the Agreement. Hungary is committed to purchase 250.000 metric tons of wheat. |
| Ierband, ....................... | Although there is no contractual obligation, Canada and Iceland adhere to the terma of a treaty originally concluded between Denmark and Britain on Feb. 13, 1660. <br> Ioeland has acceded to GATT provisionally. | Exchange of most-favoured-nation treatment. |
| Indoneik ..................... | GATT effective Mar. 1, 1948. | Exchange of most-favoured-nation treatment. |
| Iran.......................... | Special arrangement by Order in Council effective Feb. 1, 1951. <br> Iran accorded most-favoured-nation treatment from Sept. 5, 1956. | Canada grants most-favoured-nation tariff rates as long as Iran accords reciprocal treatment. |
| IRsa. | Special arrangement by Order in Council effective Sept. 15, 1951. | Exclange of most-favoured-nation tariff treatment. |
| Ireland. | Trade Agreement signed Ang. 20, 1932; in force Jad. 2, 1933. <br> Trade Agreement is at present under review in the light of Anglo-Irish Free Trade Agreement effective July I, 1966. | Canada granta Britiah preferential tariff in return for preferential ratea where sucb exist and for moat-fa voured-bation rates on non-preferential items. May be terminated on six months notice. |
| Israti. | Canada-U.K. Agreement of 1937 con + tinued to apply to the State of Iarael alter its foundation in May 1948. GATT effective July 5, 1962. | Exchange of most-favoured-nation treatment. May be terminated on three monthe notice. |
| Italr........................... | Modus vivendi by exchange of notes of Apr. 23-28, 1948; effective Apr. 28, 1848. GATT effective Jan. 1, 1950. | Exchange of mostfavoured-nation treat ment. May be terminated on three months notice. |
| Ivory Consr. | Franco-Canadian Trade Agreement of 1933 applied to the Ivory Coast. GATT effective Aug. 7, 1960. | Exchange of most-favoured-nation treatment. |
| Japan. | Agreement on Commerce signed Mar. 31, <br> 1954: effective June 7, 1854. GATT efective Sept. 10, 1955. | Exchange of most-favoured-nation treat ment. May be terminated on tbree monthe notice. |
| K¢Watt........................ | Canada-U.K. Agreement of 1937 applied to Kuwait as a British Proteetorste. GATT effective June 18, 1961. | Since independence of Kuwait in June 1961, Canads has continued to accord most-favoured-aation treatment. |
| Lenos, . | Franco-Canadian Trade Agreement of 1033 applied to Laos. | Since the creation of Lasas as an independ ent state in 1955. Canada has continned to grant most-favoured-nation treatment. |
| Lebanon. | Special arrangement by Order in Council of Nov. 19, 1946. | Canada grante most-favoured-nation tariff rates as long as Lebanon accords reciprocsl treatment. |
| Liberia | Special arrangement by Order in Council effective Mar. 1, 1955. | Canada grants moet-favoured-nation treatment. |
| Lrecetenstyin | (See Switzerland. |  |
| Luxembotra, | (See Belgiam-Laxemboarg.) |  |
| Malagaay Republic. | Franco-Canadian Trsde Agreement of 1933 applied to Malayagy Republic. GATT effective June 25, 1980. | Exchange of most-favoured-nation treatment. |

# Tarifi and Trade Arrangements with Non-Commonwealth Ceuntries as at Sept. 15, 1946-continued 

| Country | Agreement | Tariff Treatiment |
| :---: | :---: | :---: |
| Malu, Frderation of.......... | Franco-Canadian Trade Agreement of 1933 applied to Mali. <br> Mali maintains a de fecto application of the GATT. | Since the creation of Mali as an independent state in 1960, Canada has continued to grant most-favoured-nation treatment. |
| Madritania.................... | Franco-Canadian Trade Agreement of 1933 applied to Mauritania. GATT effective Nov. 28, 1960. | Exchange of most-favoured-nation treatment. |
| Mexico.. | Trade Agreement signed Feb. 8, 1946; in force provisionally same date. Ratifications exchanged on Msy 6, 1947; definitively in force 30 deys fram that date. | Exchange of most-favoured-nation treatment. May be terminated on six months potice. |
| Morocco....................... | Various agreements relating to former French Spanieh and International Zones of Morocco. | Since the creation of Morocco as an independent state in 1956, Canada has continued to grant most-favourednation treatment. |
| Netamblands.. | Convention of Commerce of July 11, 1924. Suspended during war: reinstated by exchange of notes Feb. 1 and 5, 1946. Includes Netherlands Antilles and Surinam. GATT effective Jan, 1, 1948. | Exchange of most-favoured-nation trestment. May be terminated on one years notice. |
| Nichragda.................... | Trade Agreement signed Dec. 19, 1948; in force provisionally asme date. GATT effective May 28, 1950. | Exchange of most-iavoured-nation treatment. |
| Nuger.......................... | Franco-Canadian Trade Agreement of 1933 applied to Niger. GATT effective Aug. 3, 1960. | Erchange of most-favoured-nation treatment. |
| NORWAY...................... | Convention of Commerce and Navigation with U.K. of Mar. 18, 1826, applied to Canads. <br> GATT effective July 10, 1948. | Exchange of most-favoured-nation treatment. Convention of May 16, 1913 provides means for separate terminstion by Dominions on one years notice. |
| Panama........................ | Order in Council of July 20, 1935, accepted Article 12 of U.K.-Panama Treaty of Commerce of Sept. 25, 1928. Treaty terminated in 1942. | While contractual obligation has expired, Canada and Panama continue to exchange most-favoured-nation treatment. |
| Paragoat. | Exchange of notes of May 21, 1940; in force June 21, 1940. | Erchange of most-favoured-nation treatment. May be terminated on three months notice. |
| Perd........................... | GATT effective Oct. 8, 1951. | Exchange of most-lavoured-nation treatment. |
| Philippinem..................... | No agreement. | Canada and Philippines, without contractual obligation, contipue to exchange most-favoured-nation treatment (ercluding preferences accorded by the Philippines to the United States). |
| PoLand....................... | Convention of Commerce signed July 3, 1935, in force Aug. 15, 1936. <br> Although not a full member, Poland takes part in the work of GATT under a special arrangement. | Exchange of most-favoured-nation treatment including schedaled reductions. May be terminated on three months notice. |
| Portugal, Portidgersa adjacent Ibjands and Portdgutse overagas provinces. | Trade Agreement gigned May 28, 1954 E provisionally in effect July 1, 1954, de finitively in force on ratification Apr. $29,1955$. GATT effective May 6, 1962. | Exchange of most-favoured-nation treatment. Remains in effect for two years from ratification and therealter unless terminated on three months notice. |

# Tarifi and Trade Arrangements with Non-Commonwealth Conntries as at Sept. 15, 1368-continued 

| Country | Agreement | Tariff Treatment |
| :---: | :---: | :---: |
| Rwands... | GATT effective Jan. 1, 1966. | Cazada grants most-favoured-nation treatment. |
| Senegal. . . . . . . . . . . . . . . . . | Franco-Canadian Trade Agreement of 1933 applied to Senegal. GATT effective Jume 20, 1960. | Exchange of mostfiavoured-nation treatment. |
| Sodtr Aprica. | Trade Agreement signed Aug. 20, 1932; in force Oct. 13, 1832. | Exchange of British preferential rates on scheduled items. May be terminated on gir months notice. |
|  | Exchange of note8 Aug. 231, 1935; effective retroactively from July 1, 1935. GATT effective June 14, 1948. | Exchange of most-favoured-nation treat. ment. May be terminated on six months notice. |
| Spain and Spantise possesstons. | Since Aug. 1, 1928, Canada has adhered to U.K.-\$pain Treaty of Commerce of Oct. 31, 1922. | Erchange of moet-favorured-nation treatment. May be terminated on three monthe notice. |
|  | Trade Agreement signed May 26, 1954, provisionally in effect July 1, 1954, de Ginitively in force on ratification June $30,1955$. GATT eflective Aug. 29, 1963. | Supplements and amends U.K.-Spain Treaty of Commerce- Remains in effect for three years from ratification, and thereafter unless terminated on three monthas notice. |
| Strden.. | U.K.-Sweden Convention of Commerce and Navigation of Mar. 18, 1826 applies to Canada. <br> GATT effective May 1, 1050. | Exchange of most-fs voured-nation trestment. Declaration of Nov. 27, 1911 provides mesiss for separate termination by the Dominions on one years notice. |
| Swirzerland. | U.K.-Switzerland Treaty of Friendsbip, Commerce and Reciprocal Fstablishment of Sept. 6, 1855 applies to Canada. By exchange of notes Liechtenstein included under terms of this Agreement, effective July 14, 1947. GATTeffective Aug. 1, 1966. | Exchsinge of most-favoured-nation treatment. Convention of Mar. 30, 1914 provides means for separate termination by the Dominions on one years notice. |
| Syrin Arab Repubuc....... | Special Arrangement by Order in Conncil of Nov. 19, 1946. | Canada grants most-favoured-nation tariff rates as long as Syria accords reciprocal treatment. |
| Togo.........,................ | Franco-Canadian Trade Agreement of 1933 applied to Togo. GATT efective Apr. 27, 1960. | Since the creation of Togo as an independent state in 1960, Canada has continued to grant most-favoured-nation treatment. |
| Temisin, | Franeo-Canadian Trade Agreement of 1933 applied to Tunisia. <br> Tunisia has acceded to GATT provisionally. | Since the creation of Tunisia as an indopendent state in 1956, Cansda has continued to grant most-iavoured-nation trestment. |
| Turiex.. | Exchange of notes signed Mar. 1, 1948; in effect Mar. 15, 1948. <br> GATT effective Oct. 17, 1951. | Exchange of most-favoured-nation treatment. May be terminated on three monthes aotice. |
| Union of Soviet Soclaliti Republics. | Trade Agreement sigued Feb. 29, 1956, renewed for another three yesrs Apr. 18, 1960 and again for the same period on Sept. 16, 1963 and again for the same period on June 20,1966 (the extension to be valid from Apr. 18, 1966). | Exchange of most-favoured-nation treatment and undertaking by U.S.S.R. to purchase a minimum of 6,375,000 long tons of wheat and flour during the threeyear period of validity of the extended agreement. |
| United Akab Repurice (Egyp). | Exchange of noter Nov. 36 and Dec. 3, 1952; in foree Dec. 3. 1952. <br> The United Arab Republic has acceded provisionally to the GATT. | Exchange of most-favoured-nation treah ment. May be terminated on sir months notice. |

## Tariff and Trade Arrangements with Non-Commonwealth Countries as at <br> Sept. 15, 1566-concluded

| Country | Azreement | Tarif Treatment |
| :---: | :---: | :---: |
| Unifed States. . . . . . . . . . . . . | Trade Agreement signed Nov. 17, 1938; guspended as long as both countriea continue to be contracting parties to GATT. <br> GATT efective Jan. 1, 1948. | Most-favoured-nation treatment ex changed. |
| Upper Volta.................. | Franco-Canadian Trade Agreement of 1933 applies to Upper Volta. GATT effective Ang. 5, 1960. | Erchange of mout-favoured-nation treatment. |
| Urodiay | Trade Agreement gigned Aug, 12, 1936; in Iorce May 15, 1940. Additional protocol signed Oct. 19, 1953. GATT effective Dec. 16, 1953. | Most-favoured-nation treatment. |
| Venezuela, | Modue vivendi signed and brought into force Oct. 11, 1950. | Exchange of most-favoured-nation treatment. Made for one year subject to annual renewal. |
| Viet-Nam..................... | Franco-Canadian Trade Acreement of 1933 applied to Viet-Nam. | Since the creation of Viet-Nam as an independent state in 1965, Canada has continued to accord wost-favcurednation rates. |
| Yugoblavia................... | Trade Agreements Act of June 11, 1928, accepted Article 30 of U.K. Serb-Crost-Slovene Treaty of Commerce and Navigation of May 12, 1927; in force Aug. 9, 1928. <br> GATT effective Aug. 25, 1966. | Exchange of most-favoured-nation treatment. May be terminated on one years notice. |

## PART III.-TRAVEL BETWEEN CANADA AND OTHER COUNTRIES

Travel, for pleasure and for other reasons, between Canada and other countries continues to increase year by year. It is natural that a good portion of this movement should be between Canada and the United States and that the inward movement from the United States should be somewhat greater than the movement from Canada to that country. Of the $33,890,000$ visits of Canadians to other countries in 1965, more than $33,433,000$ were to the United States, and of the $34,000,000$ visits to Canada from other countries, $33,887,000$ were from the United States. Each of these figures was up about 4 p.c. from 1964. However, in recent years, travel between Canada and overseas countries has been expanding at a proportionately greater rate than that between Canada and the United States. Canadian visits overseas in 1965 numbered 456,350 , which was 16.5 p.c. bigher than in the previous year, and the number of visitors entering Canada directly from overseas reached a total of 132,900 , up 17.8 p.c. from 1964.

The effect of these increases in the number of visits to and from Canada and the resulting increases in the expenditures involved is of considerable importance to persons in the travel industry and also to those concerned with Canada's balance of payments position. In 1965 Canadians travelling outside the country spent an estimated $\$ 796,000,000$, an amount 12 p.c. more than in 1964, and expenditures of all visitors to Canada amounted to $\$ 747,000,000$, an increase of 13 p.c. over the previous year; the result was a deficit of $\$ 49,000,000$ compared with one of $\$ 50,000,000$ the year before. This deficit was more than accounted for by overseas travel, per capita expenditures on which are very much higher than on travel to and from the United States. While overseas visitors in Canada spent
about $\$ 87,000,000$ in 1965 , Canadians visiting overseas spent $\$ 248,000,000$, a rise of 7 p.c. over 1964, increasing the debit balance on travel account with overseas countries to $\$ 161,000,000$ from $\$ 159,000,000$. On the other hand, payments by United States residents in Canada increased 12 p.c. to $\$ 660,000,000$ and expenditures by Canadian visitors in the United States (including Hawaii) increased 14 p.c. to $\$ 548,000,000$, creating a credit balance for Canada of $\$ 112,000,000$ compared with $\$ 109,000,000$ in 1964.

Travel Between Canada and the United States.-Much of the travel between these two countries is by car. Of the $33,900,000$ visits of United States residents to Canada in $1965,26,203,600$ were made by this mode of travel; an 0.6 -p.c. drop compared with 1964 was accounted for by a 4.5 -p.c. decrease in the number of short-term travellers that was not quite offset by a 5.9 -p.c. increase in the number of long-term visitors. On the other hand, larger average expenditure per person for both short-term and long-term visits in 1965 resulted in a 10.5 -p.c. increase in total expenditure for United States visitors travelling by car, which amounted to $\$ 439,601,000$. Length of stay of travellers is always significant since it has an important bearing on the amount of money spent. For instance, 64.9 p.c. of the United States visitors to Canada in 1965 entered and Jeft on the same day, yet accounted for only 11 p.c. or $\$ 72,709,000$ of the total amount spent by all United States visitors to Canada; the remaining 89 p.c., or $\$ 587,134,000$, was spent by visitors staying one or more nights, although these constituted only 35.1 p.c. of the total number.

Of other modes of travel from the United States, only rail showed a decline from the 1964 total, air and bus travel being up about 15 p.c. and boat travel about 5 p.e. In connection with the latter, it is interesting to note a few features of pleasure boat travel. Such craft.entering Canadian waters from the United States in 1965 numbered 78,250 , slightly fewer than in 1964 . Ontario received 82 p.c. of the entries, Quebec 10 p.c. and British Columbia 8 p.e. Most of them entered during the April-September season and about 60 p.c. entered and left on the same day, although there was considerable variation among the provinces in length of stay, quite evidently depending on the distance between the United States and Canadian ports. Of those entering Ontario, where the ports are very close, 93 p.c. left on the same day; of those entering Quebec, where the ports are somewhat farther apart, 61 p.c. left on the same day; in British Columbia, on the other hand, where distance to be travelled between American and Canadian ports is much greater, 97 p.c. stayed one or more nights.

Canadian travel to the United States established new records in 1965 in both numbers and expenditures, although not all means of travel contributed to the increase as is shown in Table 2. Travellers by automobile comprised 79.5 p.c. of the total number and accounted for $\$ 304,882,000$, or 56.7 p.c. of the travel expenditure in the United States (excluding Hawaii), a total higher by 20 p.c. than in 1964. It is interesting to note that Canadians usually apend less time in the United States per visit than United States visitors spend in Canada. In 1965, 81.3 p.c. of the Canadians visiting the United States entered and left on the aame day, compared with 64.9 p.c. of the United States visitors to Canada. Shortterm Canadian visitors spent 10.5 p.c. of the total payments to the United States, the remaining 89.5 p.c. being spent by long-term visitors who made up only 18.7 p.c. of the total number.

Canadians travel to the United States for a variety of reasons-recreation accounted for an estimated 51.6 p.c. of the visits in 1965 , visits to friends and relatives for 30.1 p.c., business for 11.7 p.c., health for 2.6 p.c., and shopping for 2 p.c. Residents of the Atlantic Provinces accounted for the highest percentage (40.4) travelling to the United States to visit friends and relatives; Alberta recorded the highest percentage (23.6) of business trips and Quebec recorded the highest percentage (57.1) of trips for recreation.

## 1.-Number and Expenditure of United States Travellers in Camada and Canadian Travellers in the United States, 195\%-\$5

| Year | U.S. Travellers in Canada | U.S. Expenditure in Canada | Canadians <br> Travelling in D.S. | Canadian <br> Expenditure in U.S. | Excess of U.S. <br> Travellers in Canada | Balance of Payments with the U.S. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \$ 000 | No. | \$000 | No. | \$000 |
| 1956. | 27,666,500 | 300.000 | 27.078.700 | 381,000 | + 589,800 | - 82,000 |
| 1957 | 28,619,400 | 325.000 | 27,209.400 | 403,000 | +1,410,000 | - 78,000 |
| 1958 | 28,530,700 | 309,000 | 27, 421,700 | 413,000 | +1,109,000 | -104,000 |
| 1959 | 29,880,800 | 351,000 | 27,989,900 | 488,000 | +1,890.900 | - 97,000 |
| 1960. | 29,654,600 | 375,000 | 29,045,800 | 462,000 ${ }^{1}$ | + 608,800 | - 87,000 |
| 1981 | 30,474,200 | 435,000 | 29.288 .500 | $459.000{ }^{1}$ | +1,185,700 | - 24.000 |
| 1962 | 31,656,400 | 512.000 | 27, 944,600 | 418.0001 | +3.711,800 | +83,000 |
| 1963 | 31,864, 800 | 649.000 | 29,389,800 | 388.0001 | +2,475.000 | +181.000 |
| 1965 | 32, 483, 100 | 590,000 660,000 | $32,184,100$ $33,433,400$ | ${ }_{6481,0001}{ }^{481}$ | + 299,000 | $+509.000$ |
|  |  | , | 3, 33,100 |  | ¢3,.00 | +112,000 |

## 1 Inclades Hawaii.

2.-Number and Expenditure of United States Travellers in Canada and Canadian Travellers in the United States, by Means of Travel and Length of Stay, 1964 and 1985

| Year and Item | $\begin{gathered} \text { U.S. } \\ \text { Traveliers } \\ \text { in } \\ \text { Canadal } \end{gathered}$ | U.S. Expenditure in Carada | Canadians Travelling in the U.S. ${ }^{1}$ | $\begin{gathered} \text { Canadian } \\ \text { Expenditure } \\ \text { in the } \\ \text { U.S. } \end{gathered}$ | Excess of U.S. Travellers in Canada | Excess of U.S. <br> Expenditure in Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | 81000 | No. | \$'000 | No. | \$000 |
| 1965 |  |  |  |  |  |  |
| Short-Term (entering and leaving the same day) | 21,274,400 | 4,363 | 27.016,000 | 57,575 | -5,742,000 | + 3,788 |
| Automobile......................... | 16,577,400 | 35,481 | 20,764,400 | 35.777 | -4, 187,000 | - 298 |
| Aircraft. | 34,800 | 1,100 | - 26.500 | J, 766 | + 8.400 | - 666 |
| Bus. | 107.900 | 709 | 27.500 | 219 | + 80.400 | + 490 |
| Rail. | 246,600 | 373 | 23,600 | 187 | + 223,000 | + 186 |
| Boat. | 285.600 | 1,398 | 27+300 | 105 | + 258,309 | + 12933 |
| Other (pedestrians, local bus, etc.) | 4,021,600 | 22,302 | 6,146.700 | 19,521 | -2,125,100 | + 2,781 |
| Long-Term (remaining one or more mights) | 11,185,104 | 528,785 | 5,148,100 | 418,517 | +6,041,040 | +110,268 |
| Automobile............................ | 9,793,600 | 362.187 | 3,887,800 | 218.349 | +5,906,300 | +143.838 |
| Aircraft | 518,400 | 81.773 | 517.900 | 113,599 | + ${ }^{500}$ | - 31.825 |
| Bus | 444.400 | 45,359 | 422.000 | 49.810 | + 22.440 | - 4.451 |
| Rail. | 226,200 | 30.521 | 232.600 | 33.020 | - 6.400 | - 2.499 |
| Boat. | 206,500 | 8.945 | 88,300 | 3.739 | + 118,200 | + 5.206 |
| Totals, 1964 | 32,463,160 | 590,148 | 32,164,100 | 476,492: | + 299,000 | +114,056 |
| 1365 |  |  |  |  |  |  |
| Short-Term (entering and leaving the same day). | 21,293,200 | 72,704 | 27,181,109 | 66,387 | 5,191,940 | + 16,322 |
| Automobile........................ | 15,830,900 | 39,895 | 21,720,300 | 38, 694 | -5,889,400 | +1,201 |
| Aircraft...... | 39,200 | 1,254 | 25,400 | 1.367 | $+\quad 13,800$ | $+\quad 113$ $+\quad 515$ |
| Bus. | 125,600 | 843 | 20.200 | 253 | + 105.400 | + 590 |
| Rail. | 192,000 | 400 | 7,600 | 85 | + 184.400 | $\pm .315$ |
| Boat........................... | 5 304,400 | 1,707 | 17.700 | ${ }^{154}$ | + 286,700 | + 1.643 |
| Other (pedestrians, local bus, etc.) | 5,507,100 | 28,610 | 5.399,900 | 15.924 | $+107.200$ | +12,686 |
| Long-Term (remalning one or more nights) | 11,888,100 | 587,134 | 6,242,340 | 480,896 | +5,644,800 | +106, 144 |
| Automobile........ | 10,372,700 | 399.706 | 4,860,400 | 266,188 | $+5.512,300$ | +133,518 |
| Aircraft. | 584,900 | 90.847 | 811.300 | 139,788 | - 28.400 | $-38.941$ |
| Bus. | 505.300 | 54, 337 | 469,000 | 53.326 | + 36.300 | + $1+311$ |
| Rail | 215,400 | 33,242 8,702 | 208.800 | 29,227 | $\begin{array}{r}+\quad 6.600 \\ +\quad 117.000 \\ \hline\end{array}$ | ( $+\quad 4.015$ $+\quad 6.241$ |
| Boat. | 209,800 | 8.702 | 92.800 | 2.461 | + 117,000 | +6.241 |
| Totals, 1965. | 33,857,300 | 659,843 | 33,433,400 | 337,3772 | + 453,800 | +122, 405 |

[^323][^324]
## 3.-Highway Traffic at Canadian Border Points, 1964 and 1965

| Year and Province or Territory | Foreign Vebicles Inward |  |  |  | Canadian Vehicles Returning |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Entering and Leaving the Same Day | One or More Nights in Canada | Repeats and Taxis | Commercial Vehicles | Leaving and <br> Returning the Same Day | One or More Nights in U.S. | Com. mercial Vehicles |
|  | No. | No. | No. | No. | No. | No. | No. |
| 1984 |  |  |  |  |  |  |  |
| Atlantic Provinces | 301.795 | 185, 521 ' | 948,306 | 57,063 | 1,947,397 | 132.386 | 117,705 |
| Quebec............. | 336,977 | 360,383 | 162,491 | 108,058 | 1,211,561 | 434,340 | 177,080 |
| Ontario................. | 3,371,730 | 2,683,576 | 841,482 | 211,896 | 3,600,788 | 316,646 | 316,021 |
| Mantoba.............. | 56,069 | 60.196 | 60,749 | 16.407 | 163,144 | 75.025 | 21.032 |
| Saskatchewan. | 30,079 | 30,966 | 17,630 | 11.514 | 82,387 | 27.971 | 7,714 |
| Alberta...... | 14.723 | 48,550 | 19,942 | 9,522 | 53,295 | 27,694 | 6,049 |
| British Columbis...... | 213, 879 | 349,389 | 54, 493 | 67.014 | 906. 150 | 210,624 | 25, 575 |
| Yukon Territory....... | 2,080 | 21,359 | 374 | 4,015 | 1,392 | 1,047 | 420 |
| Totals, 1964........ | 4,327,342 | 3,738, $920 \cdot$ | 2,105,467 | 485,483 | 7,964,114 | 1,425,733 | c71,596 |
| 1585 |  |  |  |  |  |  |  |
| Atlantic Province .... | 318,317 | 203,076 | 938.885 | 58.215 | 2,014,465 | 129, 248 | 107,330 |
| Quebec.................. | 345, 6003 | 369,811 | 150,167 | 110,054 | 1,331,193 | 540.816 | 176,420 |
| Ontario. | 3,503,907 | 2,809,470 | 880,153 | 241,328 | 3,711,129 | 616.565 | 352,021 |
| Manitoba. | 57,237 | 63.526 | 64,425 | 17.750 | 164,419 | 74,761 | 22.104 |
| Saskatchewan. | 29,069 | 32,418 | 16,236 | 13,488 | 79,727 | 28,177 | 8,637 |
| Alberta. | 16,761 | 57,799 | 18,865 | 10,355 | 52,022 | 30,914 | 8,188 |
| Britieh Columbia...... | 240,923 | 386, 836 | 57,390 | 68,624 | 1,009,629 | 241,857 | 26.782 |
| Yukon Territory........ | 2,915 | 24,733 | 432 | 3,834 | 1,435 | 1,164 | 516 |
| Tetals, 1985. | 4,514,732 | 3,947,609 | 2,076,553 | 583,648 | 8,364,015 | 1,403,502 | 6\%9,598 |

Travel Between Canada and Overseas Countries.-Of the 456,350 Canadian residents who travelled overseas in $1965,386,350$ returned directly to Canada and 70,000 via the United States. Travel expenditures in countries other than the United States amounted to $\$ 347,000,000$, of which $\$ 167,000,000$ was spent for oceanic transportation; airlines received about 89 p.c. of the overseas transportation costs paid by Canadians returning direct to Canada. Included in the oceanic transportation costs is about $\$ 8,000,000$ paid to United States carriers which are debited to the travel account of that country, and $891,000,000$ in fares to Canadian carriers which does not represent a movement of money outside Canada and therefore is not included in the net payments of Canadians travelling overseas.

From replies to questionnaires by Canadians returning directly from overseas, the following major destinations were estimated: Britain 96,000 ; France 82,000; Germany 69,000; the Netherlands 54,000; Switzerland 53,000; and Italy 48,000. In addition to the 96,000 persons visiting Britain only, some 88,000 visited both Britain and Continental Europe. These figures represent visits to the various countries and it is quite usual for one person to visit several countries on the same trip particularly on the Continent of Europe. Visits to the Caribbean area are estimated at 51,000 and visits to Mexico at 18,000. Average lengths of stay were indicated as: Britain, 28-29 days; Britain and Continental Europe (combined), 36 days; Continental Europe, 32-33 days; Bermuda, 11-12 days; the West Indies, 16-17 days; Mexico, 17-18 days; and Hawaii, 22-23 days.

In 1965, Canadians travelling overseas to visit friends and relatives made up between 39 and 40 p.c. of all overseas Canadian visitors; the proportions going to Britain and Continental Europe for that purpose were 65 p.c. and 61 p.c., respectively. Recreation was the main reason for 82 p.c. of all Canadian visits to Bermuda and the Caribbean and for 88 p.c. of the visits to Mexico. Canadians travelling overseas in 1965 were predominantly residents of Ontario, Quebec and British Columbia, accounting for 43 p.c., 28 p.c.
and 11 p.c., respectively, of the total. Purpose of trip showed some variation when comparing direct and indirect Canadian travel overseas. Recreation was the purpose of trip for 64 p.c. of the visitors returning via the United States and visiting friends and relatives was reported by 20 p.c. of those travelling indirectly. In comparison, 50 p.c. of the travellers returning directly from overseas reported their visite as mainly for recreation and 40 p.c. for visiting friends and relatives.

In 1965, about 132,900 overseas visitors came directly to Canada, an increase of close to 18 p.c. over 1964. Expenditures made by all overseas visitors including those entering via the United States, which amounted to $\$ 87,000,000$, were almost 21 p.e. higher. Visitors from Britain spent $\$ 34,000,000$ or 39 p.c. of the total, and those from other sterling areas $\$ 9,000,000$ or 10 p.c., from other European ( 0 ECD ) countries $\$ 27,000,000$ or 31 p.e., and from other areas $\$ 17,000,000$ or 20 p.c. During the year, 56,500 visitors arrived directly from Britain, representing 42 p.c. of the total direct non-immigrant entries from overseas countries; those from other Commonwealth countries numbered 10,650 or 8 p.c.; from OECD countries 46,000 or 35 p.c.; and from other areas 19,790 or 15 p.c. Some 119,700 or 90 p.c. of the direct entries arrived by aircraft at Canadian international airports and 13,200 persons or 10 p.c. arrived by ship.

Based on questionnaire replies by overseas visitors to Canada in 1965, residents of Britain remained in Canada 35-36 days, those from other European OECD countries $37-38$ days, those from the Commonwealth countries about $20-21$ days and those from all other areas 12 days; 66.2 p.c. of all travellers from overseas came to Canada to visit friends and relatives compared with 66.5 p.c. in 1964; 16.9 p.c. reported business as their main purpose of trip compared with 17.8 p.c. in 1964; and those who came for recreational purposes made up 15 p.c. compared with 13.3 p.c. in the previous year. Purpose of trip showed considerable variation according to area of residence. More than 76 p.c. of the visitors from Britain came to visit friends and relatives but the proportion of arrivals for this reason from countries other than the Commonwealth and OECD countries was only 29 p.c.; the respective proportions for recreation were 10 p.c. and 43 p.c. The percentage of travel for business reasons ranged from about 12 p.c. of the visitors from Britain to over 25 p.c. from OECD countries.

# CHAPTER XXIII.-PUBLIC FINANCE* 

## CONSPEGTUS

|  | Page |  | Page |
| :---: | :---: | :---: | :---: |
| Section 1. Combtned Statietics of Public Finance for All Governnents. . . . | 1015 | Subsection 2. Public Accounts Statistics of Federal Government Finance.... ... | 1040 |
| Gecmion 2. Taxation in Canad | 1018 | Subsection 3. Revenue from Taxation. | 1045 |
| Subsection 1. Federal Taxes... | 1021 |  |  |
| Subsection 2. Provincial Taxes. | 1030 | Section 4. Federal-Provincial Conditional <br> Grante and Shafrd-Cost Prograng. | 50 |
| Subsection 3. Municipal Taxes . . . . . . . . . . . | 1034 |  | 5 |
| Subsection 4. Miscellaneous Levies. . . . . . . . | 1034 | Section 5. Provinclal Government |  |
| Seciion 3. Federal Goyernment F | 1035 | Finance.. | 1057 |
| Subsection 1. DBS Statisties of Federal Government Finance. . | 1035 | Sbgtion 6. Municipal Government Finance | 1064 |

The interpretation of the symbols used in the tables throughout the Year Book will be found on $p$. viii of this volume.

Combined statistics of public finance for all governments in Canada-federal, provincial and municipal-are presented in Section 1 of this Chapter and Section 2 covers the incidence of taxation at the three levels. More detailed information for each level of government is given in Sections 3, 5 and 6. Section 4 gives information on the rapidly growing list of joint federal-provincial programs and on the extent of federal financial participation in such programs.

## Section 1.-Combined Statistics of Public Finance for All Governments

Combined Revenue and Expenditure.-Tables 1 and 2 give details of the federal, provincial and municipal net combined revenue by source and net combined current and capital expenditure by function, respectively, for 1962 and 1963. This net basis has been prepared by deducting from revenue, and from the appropriate expenditure, certain specified amounts such as grants-in-aid and shared-cost contributions from other governments, institutional revenue, and interest, premium, discount and exchange revenue. Amounts provided for debt retirement are excluded to avoid duplication since all expenditure resulting from capital borrowings is included.

Inter-government transfers such as subsidy payments by the Federal Government to the provincial governments are unconditional grants and therefore cannot be offiset against any specific expenditure. These are set out separately in Tables 1 and 2 in order to prevent duplication and to provide additive totals. Because of the differing accounting practices of governments and variations in fiscal year-ends, discrepancies appear between the amounts recorded as inter-government transfers in the two tables.

[^325]
## 1.-Combined Revenue of All Governments, 1962 and 1963

Note.--Figures are for fiscal years ended nearest Dec. 31.

| Source | 1962 |  |  |  | 1963 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Federal | Provincial | Municipal | Total | Federal | Provincial | Municipal | Total |
|  | \$000 | \$'000 | \$'000 | ${ }^{\prime}$ '000 | $8{ }^{\prime} 000$ | \$000 | \$'000 | \$ 000 |
| Taxes-Income- |  |  |  |  |  |  |  |  |
| Corporations | 1,298,067 | 395, 340 | $\cdots$ | 1,693, 427 | 1,374,708 | 412,236 | - | 1,786,944 |
| Individuals. | 2,018,276 | 359,921 | - | 2,378, 197 | 2,167,674 | 389,282 |  | 2,556,956 |
| Interest, etc., going abrosd. . | 129,187 | - |  | 129, 137 | 124,500 |  |  | 124,500 |
| General sales................ | 1,108,210 | 515,601 | 42,292 | 1,666, 106 | 1,277,815 | 562,021 | 58,080 | 1,897,916 |
| Motor fuel and fuel oil sales. | - | 483,669 | ${ }^{635}$ | 484,304 | - | 539,007 | 861 | 539,868 |
| Other sales. |  | 65,453 | 3.242 | 68,695 |  | 70,098. | 3,493 | 73,591 |
| Customs import duties.. | 644,902 |  |  | 644,992 | 581,441 | - | 二 | 581,441 |
| Real and personal property .... | - | 9.001 | 1,529, 993 | 1,538,994 |  | 9,089 | 1,621,785 | 1,630,874 |
| Business . . . . . . . . . . . . . . . |  | 20 | 48,106 | 48.106 | - |  | -51,733 | 51,733 |
| Estate taxes and succession duties. | 87,143 | 72,014 | - | 159,157 | 90,671 | 85,679 |  | 176,350 |
| Other....... | 491 | 186,569z | 14,407 | 201,467 | 219 | 197, 888 | 16,678 | 214,780 |
| Totals, Taxes | 5,927,592 | 2,087,571 | 1.638,675 | 9,653,838 | 6,282,792 | 2,265,295 | 1,752,680 | 10,300,717 |
| Privileges, Licences and Permits- |  |  |  |  |  |  |  |  |
| Liduor control and regulation.. | 11 | 53,062 | 二 | 53,073 | 11 | $\stackrel{55,502}{ }$ | - | 55,513 |
| Natural resources | 3,928 | 315, 552 | - | 319,480 | 5,232 | 366,617 |  | 371, 849 |
| Other....... | 22,837 | 33,862 | 29,208 | 85,607 | 23,622 | 36,421 | 31,907 | 91,950 |
| Totals, Privileges, Licences and Permits. | 26, 476 | 380,305 | 29,208 | 644,980 | 28,865 | 669,302 | 31,907 | 730,074 |
| Sales and services | 62,617 | 56, 242 | - | 118,859 | 67.051 | 54,017 | - | 121,098 |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Other................... | 107,084 | 8,318 | 27,094 | 142,496 | 124,651 | 13,250 | 26,141 | 184, 042 |
| Federal and provincial in lieu of tares. |  | - |  | 20,524 |  | - | 24,208 | 24,208 |
| Other revenue. | 279,271 | 4,259 | 128, 605 | 412,225 | 322,312 | 4,543 | 146,091 | 472,846 |
| Non-revenue and surplus receipts, | 22,751 | 4,885 |  | 27.636 | 27,695 | 10,009 |  | 37.704 |
| Totals, Net General Reve enue excluding Intersovernment Transfers. | 6,427,004 | 2,976,888 | 1,844,196 | 11,248, 688 | 6,854,214 | 3,259, 374 | 1,480,977 | 12,095,365 |
|  |  |  |  |  |  |  |  |  |
| Fiscal and tax-sharing arrangements. | - | 202,249 | - | 202,249 | - | 182,179 | $\sim$ | 182,179 |
| Share of income tax on power utilities. |  | 10,207 |  | 10,207 |  | 9,868 |  | 9,868 |
| Subsidies.. |  | 66,470 | 78.743 | 145,213 | - | 66,526 | 78,857 | 145,383 |
| Special payments | - | , | 1,642 | 1,642 | - | $\rightarrow$ | 1,740 | 1,740 |
| Grante in lieu of municipal taxes on federal and provincial property |  | - | 29,423 | 29,423 | - | $\cdots$ | 31,528 | 31,528 |
| Grand Tetals, Net General Revenue. | 6,423,004 | 3,255,814 | 1,954,094 | 11,636,82\% | 6,854,214 | 3,518,547 | 2,098,102 | 12,465,563 |

## 2.-Combined Grpenditure of All Governments, 1582 and 1863

Note.-Figures are for fiscal years ended nearest Dec. 31.

| Function | 1962 |  |  |  | 1963 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Federsl | Provincial | Munic ipal | Total | Federal | Provincial | Municipal | Totn |
|  | \$ 000 | \$ 000 | \$000 | \$000 | \$ 000 | \$ 000 | \$000 | 8000 |
| Defence services and mutusa aid. | 1,594,645 | - | - | 1,594,645 | 1,717,208 | - | - | 1,717,208 |
| fits..................... | 337,761 | - | - | 337,76 | 335,902 | - | - | 335,902 |
| Health- | 371 | 588 | 48.775 |  |  |  |  |  |
| Other.. | 54, 197 | 66,133 | 23,970 | 144,300 | 62,419 | 109,724 | 26,587 | $1,040,228$ 198,730 |
| Totals, Heslth | 425,376 | 655, 129 | 72,745 | 1,153,250 | 481,936 | 692,214 | 54,808 | 1,238,858 |
| Sanitation and waste removal. <br> Social Welfare- <br> Aid to unemployed and unemployables. |  | - | 177,700 | 177. | - | - | 183,471 | 183,471 |
|  | 96,477 | 115,352 | 12.464 | 224,293 | 107,370 | 122,346 | 12.552 | 242,268 |
| National employment and unemployment insurance services. | 106,387 | - | 1 - | 106,387 | 110,290 | - | - | 110,290 |
| Aid to blind and disabled persons. | 24,516 | 23,342 |  | 47,858 | 25,195 | 23,835 |  | 48,030 |
| Old age assistance. | 38,3501 | 43,992 ${ }^{2}$ |  | 82,342 | 89,4011 | $46,735{ }^{2}$ |  | 88,138 |
| Old age secarity fund | 734,382 ${ }^{\text {d }}$ | - 7 |  | 734.382 | 808,391 ${ }^{\text {\% }}$ | - |  | 808,391 |
| Other aid to the age |  | 30,758 | 1,697 | $\begin{array}{r}32,455 \\ \hline 534,634\end{array}$ | 541,321 | $31.349{ }^{\circ}$ | 1,814 ${ }^{5}$ | 33,183 |
| Other........... | 30,297 | 78,213 | 32,827 | 141,337 | 34,310 | 85,920 | 32,067 | 152,297 |
| Totals, Socisl Welfare | 1,565,043 | 291,657 | 48,988 | 1,903,688 | ,686,278 | 310,185 | 46,433 | 2,022,806 |
| Education. $\qquad$ <br> Transportation and Commanications $\rightarrow$ <br> Highways, roads and bridges Other. | 274, 934 | 987,776 | 877,811 | 2,140,521 | 206,326 | 1,089,453 | 888, 158 | 2,183,937 |
|  |  |  |  |  |  |  |  |  |
|  | $\begin{array}{r} 74,131 \\ 360,473 \end{array}$ | $\begin{array}{r} 704,679 \\ 6,208 \end{array}$ | 379,852 | $\begin{array}{r} \mathbf{1}, \mathbf{1 5 8 , 8 6 2} \\ 366,679 \end{array}$ | $\begin{array}{r} 81,565 \\ 368,888 \end{array}$ | $\begin{array}{r} 784,512 \\ 5,491 \end{array}$ | 404,251 | $\begin{array}{r} 1,270,828 \\ 374,379 \end{array}$ |
| Totals, Trangportation and Communjeations. | 434,604 | 710,885 | 379,852 | 1,525,341 | 450,453 | 700,003 | 404,251 | 1,644,707 |
| Natural rescurces and primary induatrien. | 357,095 | $192,188$ | - | $549,283$ | 421.232 | 208,018 | - | 629,250 |
| Debt ehartes excluding debt retirement | 754,940 |  |  |  |  |  |  |  |
| Contribations to own government enterprises. | $155,301$ | 5,605 | 23,448 | 184,354 | 149,475 | 3.789 | 27,397 | 190,661 |
| Other Erpenditure- <br> General government. <br> Protection of persons and property. <br> International cooperation and aseistance... <br> Recreation and cultural services. <br> Other. | 289,540 | $\begin{aligned} & 142,083 \\ & 158,290 \end{aligned}$ | $\begin{aligned} & 168,579 \\ & 282,822 \end{aligned}$ | 600,152 | 298.702 | $\text { 153, } 592$ | $188,761$ | 641,055 |
|  |  |  |  |  |  |  |  |  |
|  | 95,407 |  |  | 536,519 |  |  |  |  |
|  |  | $158,290$ | 282, 822 | 56,892 | 99, 125 | 172,100 | 298, 543 | 569,769 |
|  |  |  |  |  |  |  |  | 4,621 |
|  | 32,391 | 29,772 | 102,775 | 154,9 | 34,5 | 29,632 | 108, 181 | 170,313 |
|  | 449,684 | 68,331 | 175,235 | 693,25 | 491.33 | 87,428 | 154,653 | 733,418 |
| Totals, Other Expenditure... | 923,914 | 398,426 | 729,411 | 2,051,751 | 998,285 | 442,753 | 748, 128 | 2,189,176 |
| Nonexpense and sarplus payments. | 34,428 | 13,405 | - | 47, B31 | 425 | 12,219 | - | 12.844 |
| Totals. Net General Espenditure exelurding Interogoxernment Transfers. | 6,858,439 | 3,357,804 | 2,485,437 | 12,701,280\| | ,260,371 | 3,671,139 | ,558,356 | 13,484,806 |

[^326]
## 2.-Combined Expenditure of AH Governments, 1862 and 1963-concluded

| Function | 1962 |  |  |  | 1963 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Federal | Provincial | Manicipal | Total | Federal | Proviocial | Munioipal | Total |
|  | \$000 | \% 000 | \$000 | \$000 | \% 000 | \$ 000 | \$000 | \% 000 |
| Inter-government TransfersFiscal and tax-sharing arrangements. | 202,295 | - | - | 202,295 | 182,329 | - | - | 182,329 |
| Share of income tax on power utilities. | 10,000 | , | - | 10,000 | 9,888 |  | - | 9.888 |
| Subsidies.................... | 66, 471 | 74, 104 | - | 140,575 | 66,525 | 75,196 | - | 141,721 |
| Special pryments.............. | 1,642 | - | - | 1,642 | 1,899 |  | - | 1,898 |
| Grants in lieu of municipal taxes on federal and provincial property. | 29,947, | 3,522 | - | 33,469 | 31,920 | 4,030 | - | 35.950 |
| Grand Totals, Net General Expenditure. | 7,168, 74 | 3,435,430 | 2,485,437 | 13,089,281 | 7, 552,312 | 3,754,365 | 2,853,356 | 3,856,633 |

Consolidated Debt.-Table 3 gives details of combined debt of all governments for 1962 and 1963 with the aggregate debt of the federal, provincial and municipal governments; the inter-government debt is deducted to arrive at a consolidated government figure.

## Section 2.-Taxation in Canada*

Canada is a federal state with a central government and ten provincial governments. In 1867 the principal colonies of the British Crown in North America joined together to form the nucleus of a new nation and the British North America Act of that year became its written constitution. This statute created a central government with certain powers while continuing the existence of political subdivisions called provinces with powers of their own.

Under the British North America Act the Parliament of Canada has the right to raise "money by any mode or system of taxation" while the provincial legislatures are restricted to "direct taxation within the province in order to the raising of a revenue for provincial purposes" Thus the provinces have a right to share only in the field of direct taxation while the Federal Government is not restricted in any way in matters of taxation. The British North America Act also empowers the provincial legislatures to make laws regarding "municipal institutions in the province" This means that the municipalities derive their incorporation with its associated powers, fiscal and otherwise, from the provincial government concerned. Thus, from a practical standpoint, municipalities are also limited to direct taxation.

A direct tax is generally recognized as one "which is demanded from the very person who it is intended or desired should pay it" This conception has limited the provincial governments to the imposition of income tax, retail sales tax, succession duties and an assortment of other direct levies. In turn, municipalities, acting under the guidance of provincial legislation, tax real estate, water consumption and places of business. The Federal Government levies direct taxes on income, on gifts and on the estates of deceased persons, and indirect taxes such as excise taxes, excise and customs duties, and a sales tax.

[^327]Norr.-Figures are for fiacal yeara ended neareat Dea. 31.

| Item | 1962 |  |  |  |  |  | 1963 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Federsal | Provincial | Municipal | Total | Deduct Inter-government Debt | Contolideted Government Debt | Federal | Provincial | Municipal | Total | Deduct Inter: government Debt | Consolidated Goversment Debt |
| Direct Debt- <br> Fanded debt 1 <br> Less sinking funds $\qquad$ | \$000 | \$'000 | \$ 000 | \$'000 | \% ${ }^{\prime} 000$ | \$000 |  | $\begin{gathered} \$ \prime 000 \\ 4,718,459 \\ 885,863 \end{gathered}$ | $\begin{array}{c\|} \hline \$ \mathbf{6 0 0} \\ 5,527,227 \\ 228,478 \end{array}$ | $\begin{gathered} 8600 \\ \\ 26,783,783 \\ 914,331 \end{gathered}$ | $\begin{aligned} & \hline 1000 \\ & 185,798 \end{aligned}$ | $\begin{gathered} \$ 000 \\ 26,587,985 \\ 914,334 \end{gathered}$ |
|  | 15,796.886 | 4,410,573 | 5,076,334 | 25,283,743 | 174,048 | $\begin{gathered} 5000 \\ 25,109,695 \\ \hline 900,600 \\ \hline \end{gathered}$ |  |  |  |  |  |  |
|  | 22.312 | 688,200 | 180, 148 | 900,660 |  |  |  |  |  |  |  |  |
| Net funded debt. | 15.774,524 | 3,722,373 | 4,886.180 | 24,383,083 | 174,048 | $24,209,035$ |  | 4,030,608 | 5,298,749 | 25,839,452 | 165,798 | 25,673,654 |
| Treasury bills: | 2,165,000 | 63,085 | - | 2,228.085 | - | $2,228,085$ | $\left\|\begin{array}{r} 16,510,097 \\ 2,230,000 \\ 24,605 \\ 6,985,901 \end{array}\right\|$ | $\begin{gathered} 68.015 \\ 7 \\ 76,415 \\ 683,114 \\ \hline \end{gathered}$ | $\begin{gathered} \overrightarrow{-} \\ 322,319 \\ 567,888 \end{gathered}$ | $\left\|\begin{array}{r} 2,298,015 \\ 24,605 \\ 398,734 \\ 8,230,901 \end{array}\right\|$ |  | $\begin{array}{r} 2,298,015 \\ 24,005 \\ 399,734 \\ 8,000,067 \end{array}$ |
| Savings deposits. | 25,880 | 39,608 | 250, 761 | 25,880 200,869 |  | 25,880 290,369 |  |  |  |  |  |  |
| Other direct liabilitie | 8,608,200 | 672,636 | 507, 118 | 7,788,044 | 209,505 | 7,578,539 |  |  |  |  |  |  |
| Totals, funds)................................. | 21,573,684 | 4,497,762 | 5,644,065 | 34,715,441 | 383,553 | 34,331,908 | 25, 750 , 613 | 4,858,150 | ©,188,954 | 36,797,767. | 40\%,632 | 36,385,075 |
| Indirect DebtGuaranteed bonds. Less sinking funds. $\qquad$ |  |  | $\begin{array}{r} 12,317 \\ 333 \end{array}$ | $\begin{array}{r} 6,041,172 \\ \quad 137,880 \\ \hline \end{array}$ | $\begin{array}{r} 505,425 \\ 5,087 \end{array}$ | $\begin{array}{r} 6,585,747 \\ 132,803 \\ \hline \end{array}$ | 1,877,611 | $\begin{array}{r} 5,516,312 \\ 213,988 \\ \hline \end{array}$ | $\begin{array}{r} 11,340 \\ 369 \end{array}$ | $\begin{array}{r} 6,905,263 \\ 214,337 \end{array}$ | $\begin{array}{r} 566,232 \\ 4,120 \end{array}$ | $\begin{array}{r} 6,339,031 \\ 210.147 \end{array}$ |
|  | 1,381,361 | $\begin{array}{r} 4,647,494 \\ 137,557 \end{array}$ |  |  |  |  |  |  |  |  |  |  |
| Net guaranteed bonds. | 1,381,361 | 4,509,937 | . 884 | 5,903,282 | 500,338 | 5, 402, 944 | 1,377,611 | 5,302,344 | 10,971 | 6,690,926 | 562,042 | 6,128,884 |
| Loans under the Municipal Improvement Assistance Act, 1938. | - | 1,294 | 11 | 4,779.816 | $\begin{aligned} & 1,294 \\ & 4,967 \end{aligned}$ |  | $\left\lvert\, \begin{gathered} - \\ 5,110,626 \end{gathered}\right.$ | $\begin{array}{r} 1,116 \\ 165,695 \end{array}$ | 21 | $\begin{array}{r} 1,116 \\ 5,276,342 \end{array}$ | $\begin{aligned} & 1,116 \\ & 6,012 \end{aligned}$ | $5,270,330$ |
| Guaranteed bank loans and other indirect liabilities. | 4,610,975 | 188,830 |  |  |  |  |  |  |  |  |  |  |
| Totals, Indlrect Debt (less sinking funds) | 5,992,936 | 4,680,061 | 11,995 | 10,634,382 | 506,599 | 10,177,703 | c,488,238 | 6,469,155 | 14,992 | 11,968,384 | 569,170 | 11,359,214 |
| Grand Totals. | 30,560,030 | 9,175,763 | 5,656,060 | 45,397,853 | 894,152 | 44,509, 701 | 32,338,840 | 10,327,305 | 6,198,940 | 48,769,091 | 971,802 | 47,734,289 |
|  |  |  |  | 2 Includes treasury bills having a terto of less than two years. $\quad{ }^{2}$ Included in "Other direct overnment guarantee of deposite maintained by chartered banke in the Bank of Canada and misor were indeterminate at the close of the fiscal year. |  |  |  |  |  |  |  |  |

The increasing use by both the federal and the provincial governments of their rights in the field of direct taxation in the 1930s resulted in uneconomic duplication and some severe tax levies. Starting in 1941, a series of tax agreements were concluded between the federal and the provincial governments to promote the orderly imposition of direct taxes. The duration of each agreement was normally five years. Under the earlier agreements, the participating provinces undertook, in return for compensation, not to use or permit their municipalities to use certain of the direct taxes. Under the present arrangements, the federal income tax otherwise payable in all provinces and the estate tax otherwise payable in three provinces are abated by certain percentages to make room for provincial levies.

The current arrangement became operative on Apr. 1, 1962 and will run until Mar. 3I, 1967. Under this arrangement there is a partial federal withdrawal from the field of direct taxation and a re-entry of all provinces into the vacated area. The federal personal income tax otherwise payable on income earned in a province and on income received by a resident of a province is reduced by the following percentages; 16 p.c. in 1962; 17 p.c. in 1963; 18 p.c. in 1964; 21 p.c. in 1965 ;* and 24 p.c. in 1966 . ${ }^{*}$ In 1965 and 1966, the federal tax abatements for income earned in Quebee or received by a resident of Quebec will be 44 p.c. and 47 p.c., respectively. The additional abatement in the case of Quebec is to allow that province to collect"revenue to pay for certain programs that are paid for in whole or in part by the Federal Government in other provinces. The Federal Goveroment also reduces its rate of corporation income tax on taxable income of corporations earned in the provinces. The reduction is 9 p.c. of taxable income earned in any province except Quebec and 10 p.c. in Quebec. The additional 1 p.c. reduction in Quebec is to compensate for the additional tax levied by the province on corporation income to provide grants to universities. These provincial grants replace federal grants which in other provinces are paid to the universities by the Federal Government through the Canadian Universities Foundation. The Federal Government also abates the federal estate tax otherwise payable by 75 p.c. in respect of property situated in a province which levies ita own death tax. Only Ontario, Quebec and British Columbia at present levy death taxes in the form of succession duties. $\dagger$

These reductions in federal income tax and estate tax under the terms of the 1962-67 fiscal arrangements do not apply to the Yukon Territory or the Northwest Territories or to income earned outside Canada. The Yukon and Northwest Territories do not impose income taxes or death taxes.

The provincial tax rates are not restricted to the extent of the federal withdrawal. The constitutional position of the provinces permits them unlimited use of direct taxes for the raising of revenue for provincial purposes. However, in all but four provinces (Ontario, Quebec, Manitoba and Saskatchewan) the provincial rates of income tax coincide with the amount of the federal abatement.

As part of the 1962-67 fiscal arrangements, the Federal Government has entered into tax collection agreements under which it collects the provincial personal income taxes for all provinces except Quebec and the provincial corporation income taxes for all provinces except Ontario and Quebec.

[^328]
## Subsection 1.-Federal Taxes

## Individual Income Tax

Every individual who is resident in Canada at any time during a year is liable for the payment of income tax for that year. Every non-resident individual who is employed or carries on business in Canada during a year is required to pay tax on the part of his income earned in Canada. The term "residence" is difficult to define simply but, generally speaking, it is taken to be the place where a person resides or where he maintains a dwelling ready at all times for his use. There are also extensions of the meaning of Canadian resident to include a person who has sojourned in Canada for an aggregate period of 183 days in a taxation year, or a person who was during the year a member of the Armed Forces of Canada, or an ambassador, a high commissioner, or an officer or servant of Canada or of any one of its provinces, or the spouse or dependent child of any such person. The extended meaning of residence also includes employees who go from Canada to work under certain international development assistance programs.

The Canadian tax law uses the concepts "income" and "taxable income" The income of a resident of Canada for a taxation year comprises his revenues from all sources inside or outside Canada and includes income for the year from all businesses, property, offices and employments. It does not include capital gains unless they arise out of the conduct of a business or as a result of an adventure in the nature of trade.

In computing his income for a taxation year, an individual must include all dividends, fees, annuities, pension benefits, allowances, interest, alimony, maintenance payments and other miscellaneous sources of income. On the other hand, war service disability pensions paid by Canada or an ally of Her Majesty at the time of the war service, unemployment insurance benefits, compensation in respect of an injury or death paid under a Workmen's Compensation Act of a province and family allowances do not have to be included in the computation of income.

In computing his income, an individual who is carrying on business may deduct business expenses including depreciation (called capital cost allowances), interest on borrowed money, reserves for doubtful debts, contributions to pension plans or deferred profit-sharing plans for his employees, bad debts, and expenses incurred for scientific research. In general, no deductions are allowed in computing income from salary and wages, although there are exceptions such as travelling expenses of employees who have to travel as they perform their work, union dues, alimony payments and contributions to registered pension plans. Individuals may deduct, within limits, amounts set aside to provide a future income under registered retirement savings plans. Students attending universities, colleges, high schools, public schools or certain other certifed educational institutions in Canada may deduct their tuition fees if they exceed $\$ 25$ per annum. Students in full-time attendance at universities outside Canada may deduct their tuition fees.

Having computed his income, the individual then calculates his taxable income by deducting certain exemptions and deductions. These exemptions and deductions are as follows: for single status, $\$ 1,000$; for married status, $\$ 2,000$; for dependent children eligible to receive family allowance,* $\$ 300$ per child; for other dependants (as defined in the law), $\$ 550$ per dependant; where the taxpayer is 70 years of age or over (or between 65 and 70 years of age if not in receipt of an old age security pension), an additional $\$ 500$; where the

[^329]taxpayer is blind or confined for the whole of the taxation year to a bed or a wheelchair, an additional $\$ 500$; charitable donations, up to 10 p.c. of income; and medical expenses, in excess of 3 p.c. of income. In lieu of claiming deductions for charitable donations and medical expenses, an individual may claim a standard deduction of $\$ 100$.

As already stated, an individual who is resident in Canada for the whole year is taxed on his income from both inside and outside Canada. An individual who is not resident in Canada at any time during the year but who carries on business in Canada or who earns salary or wages in Canada is taxed only on the income earned in Canada. In computing taxable income earned in Canada, such a non-resident individual is allowed to deduct that part of the exemptions and deductions that may reasonably be attributed to the income earned in Canada. (A non-resident who derives investment income from Canada is taxed in a different way described on p. 1021.) An individual who ceases to be a resident of Canada during the year or who becomes a resident during the year so that he is resident for only part of the year will be subject to income tax in Canada on only that part of his income for the year received while he is resident in Canada. In these circumstances, the deductions from income permitted for determining taxable income will be the amount that may reasonably be considered as applicable to the period during which he is resident in Canada.

A progressive schedule of rates is applied to taxable income, beginning at 11 p.c. on the first $\$ 1,000$ of taxable income and increasing to 80 p.c. on taxable income in excess of $\$ 400,000$. In addition, an old age security tax is levied on taxable income at the rate of 4 p.c. with a maximum of $\$ 120^{*}$ reached at the level of $\$ 3,000$.

After calculating income tax using this progressive schedule of rates, an individual is allowed a deduction from his tax under four main headings. (1) Dividend Tax Credit-to partially eliminate the double taxation of corporate profits and to encourage participation in the ownership of Canadian companies, Canadian resident individuals are allowed to deduct from their tax an amount equal to 20 p.c. of the net dividends they receive from Canadian taxable companies. (2) Foreign Tax Credit-foreign taxes paid on income from foreign sources may be credited against Canadian income tax but the credit may not exceed the proportion of Canadian tax related to such income. (3) Abatement under FederalProvincial Fiscal Arrangements-in 1966 the federal personal income tax otherwise payable on income of a resident of a province and on income earned in a province is reduced by 24 p.c., except in the case of income earned in Quebec or received by a resident of Quebec where it is 47 p.c. (see p. 1020). (4) General Tax Reduction-in 1966 all individuals may deduct from their tax an amount equal to the aggregate of 4 p.c. of their basic tax, not exceeding \$240, and 12 p.c. of their basic tax, not exceeding \$12. In 1967 and subsequent years, this deduction will be 20 p.c. of basic tax, not exceeding $\$ 20$. "Basic tax" is personal income tax, excluding the old age security tax, after deduction of the dividend tax credit but before the abatement for provincial income tax.

To a very large extent, individual income tax is payable as the income is earned. Taxpayers in receipt of salary or wagea have tax deducted from their pay by their employer and in this way pay nearly 100 p.c. of their tax liability during the calendar year. The balance of the tax, if any, is payable at the time of filing the tax return before Apr. 30 in the following year. Persons with more than 25 p.c. of their income from sources other than salary or wages must pay tax by quarterly instalments throughout the year and returns must be filed before Apr. 30 in the following calendar year.

The following statement shows what taxpayers pay (1966) at various levels of income. In calculating these taxes it has been assumed that all taxpayers take the standard deduction of $\$ 100$ and no allowance has been made for the 20 -p.c. dividend tax credit.

[^330]| Status | Income | Income Tax | Old Age Security Tax |
| :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ |
| Bingle tarpayer-no dependante................... | 1,200 | 9 | 4 |
|  | 1,500 | 37 | 16 |
|  | 2,000 | 83 | 36 |
|  | 2,500 | 147 | 58 |
|  | 3,000 | 215 | 76 |
|  | 5,000 | 555 | 120 |
|  | 10.000 | 1,754 | 120 |
|  | 20,000 | 5,580 | 120 |
|  | 50,000 | 20,713 | 120 |
|  | 100,000 | 50,603 | 120 |
| Married tarpayer-no dependanta................ | 2,200 | 9 |  |
|  | 2,500 | 37 | 16 |
|  | 3.000 | 83 | 30 |
|  | 6,000 | 375 | 116 |
|  | 10.000 | 1,470 | 120 |
|  | 20.000 | 5.148 | 120 |
|  | 50,000 | 20,168 | 120 |
|  | 100,000 | 49,953 | 120 |
| Married tanpayer-two children eligible for family allowances. | 2,800 | 9 | 4 |
|  | 3,000 | 28 | 12 |
|  | 8.000 | 277 | 92 |
|  | 10,000 | 1,329 | 120 |
|  | 20,000 | 4,889 | 120 |
|  | 50,600 | 19,833 | 120 |
|  | 100,000 | 49,563 | 120 |

The income taxes shown above are the combined federal and provincial taxes in all provinces where the provincial tax is the same as the federal abatement (i.e., in all provinces except Quebec, Manitoba and Saskatchewan). In Quebec the provincial tax approximates the federal abatement; in Manitoba and Saskatchewan the provincial tax exceeds the abatement by 5 percentage points.

## Corporation Income Tax

The Income Tax Act levies a tax upon the income from everywhere in the world of corporations resident in Canada and upon the income attributable to operations in Canada of non-resident corporations carrying on business in Canada. In computing their income, corporations may deduct operating expenses including municipal real estate taxes, reserves for doubtful debts, bad debts, and interest on borrowed money. They may not deduct provincial income taxes other than provincial taxes on income derived from mining operations. (For this purpose "income from mining operations" is specially defined.)

Regulations covering capital cost allowances (depreciation) permit taxpayers to deduct over a period of years the actual cost of all depreciable property. The yearly deductions of normal capital cost allowances are computed on the diminishing balance principle. (Taxpayers engaged in farming and fishing may choose between this and the straight-line method.) Published regulations establish a number of classes of property and maximum rates. There is provision for recapture of any amount allowed in excess of the ultimate net capital cost of any asset.

Accelerated depreciation is available to taxpayers in certain circumstances and for a limited period of time. Straight-line depreciation at a rate not exceeding 50 p.c. is granted in respect of new machinery and equipment that would otherwise fall in Class 8 of the Income Tax Regulations acquired in the period June 14, 1963 to Dec. 31, 1966 for use in manufacturing or processing businesses by individuals resident in Canada or by companies resident in Canada that have a degree of Canadian ownership. A company that has a
degree of Canadian ownership is one which throughout any 60-day period included in the 120-day period commencing 60 days before the first day of the year in question complies with the following conditions: (1) it was resident in Canada; (2) not less than 25 p.c. of its directors were residents of Canada; and (3) either (a) not less than 25 p.c. of its shares having full voting rights and shares representing not less than 25 p.c. of its equity share capital were owned by individuals resident in Canada or corporations controlled in Canada, or (b) a class or classes of its shares having full voting rights were listed on a Canadian stock exchange and no one non-resident person and no one corporation that did not comply with (a) above owned more than 75 p.c. of the shares having full voting rights, and equity shares of the corporation representing not less than 50 p.c. of the equity share capital of the corporation were listed on a Canadian stock exchange and no one non-resident person or no one corporation that did not comply with (a) above owned equity shares representing more than 75 p.c. of its equity share capital. For new manufacturing or processing businesses in designated areas of slower growth there is no requirement that they have a degree of Canadian ownership to qualify for this 50-p.c. straight-line depreciation. Moreover, the period during which their expenditures on eligible assets qualify for this accelerated writeoff extends from Dec. 5, 1963 to Mar. 31, 1967. Depreciation at the accelerated rate of 20 p.c. on a straight-line basis is also available in respect of new buildings acquired in designated areas of slower growth in the period commencing on Dec. 5, 1963 and ending on Mar. 31, 1967. Accelerated depreciation is also allowed in respect of new buildings or other structures for grain storage acquired in the period May 1, 1965 to Dec. 31, 1966* (full write-off in four years) and in respect of property acquired in the period Apr. 27, 1965 to Dec. 31, 1967 to prevent water pollution (full write-off in two years).

The 1966 Budget announced the temporary reductions of the capital cost allowances that could otherwise be claimed for certain classes of assets acquired during the period Mar. 30, 1966 to Oct. 1, 1967 The reductions will operate by recognizing in the taxation year in which the property is acquired and in the next two taxation years part only of the cost for capital cost allowance purposes. The principal classes of assets affected include most kinds of buildings and machinery and equipment with the exception of heavy construction equipment and automotive equipment, pipelines and the generating and distribating equipment of public utilities. Assets eligible for accelerated depreciation under programs to promote the acquisition of "degree of Canadian ownership" status or the development of "designated areas" are not affected by this curtailment of normal capital cost allowances.

Expenditures on scientific research by corporations qualify for special tax treatment. Generally speaking, all expenditures on scientific research related to the business of the taxpayer may be written of for tax purposes in the year when incurred. In addition, corporations are permitted to deduct, in computing income for tax purposes, 150 p.c. of their increased expenditures on scientific research in Canada. This concession is available until the end of the 1966 taxation year.

Taxpayers operating mines, oil wells and gas wells are allowed a depletion allowance, usually computed as a percentage of profits derived from mineral, oil or gas production, which continues as long as the mine or well is in operation. This allowance is in addition to capital cost allowances on buildings, machinery and similar depreciable assets used by the taxpayer and the deduction of exploration and drilling expenses. Taxpayers operating timber limits receive an annual allowance sometimes called a depletion allowance. This is a rateable proportion of the amount invested in the limit and is based on the amount of timber cut in the year. When the amount invested in the limit has been recovered, no further allowance is given.

[^331]In computing taxable income, corporations may deduct dividends received from other Canadian taxpaying corporations and also from foreign corporations in which the Canadian corporation has at least 25 p.c. stock ownership. Business losses may be carried back one year or forward five years and deducted in computing taxable income. Corporations may also deduct donations to charitable organizations up to a maximum of 10 p.c. of their income.

The general rates of tax on corporate taxable income are 18 p.c. on the first $\$ 35,000$ of taxable income and 47 p.c. on taxable income in excess of $\$ 35,000$. Corporations deriving more than one half of their gross revenue from the sale of electric energy, gas or steam pay tax on their taxable income from such sources at the rate of 18 p.c. on the first $\$ 35,000$ of taxable income plus 45 p.c. on taxable income in excess of $\$ 35,000$. Corporations that qualify as investment companies pay a tax of 18 p.c. on their taxable income. In addition to these rates, all corporations pay an old age security tax of 3 p.c. of taxable income, bringing their rates up to 21 p.c. and 50 p.c. ( 21 p.c. and 48 p.c. for the public utility companies and 21 p.c. for investment companies).

In calculating the amount of their income tax, corporations are allowed a deduction from tax under three headings. (1) Foreign Tax Credit-foreign taxes paid on income from foreign sources may be credited against Canadian income tax but the credit may not exceed the proportion of Canadian tax relative to such income. (2) Abatement under FederalProvincial Fiscal Arrangements-corporations may deduct from their federal tax otherwise payable a tax abatement equal to a fixed percentage of their taxable income attributable to operations in a Canadian province. This abatement is to make room for the provincial income tax levied by each Canadian province. The amount of the abatement is 9 p.c. of taxable income attributable to operations in any province except Quebec and 10 p.c. of taxable income attributable to operations in Quebec. (3) Provincial Logging Tax-corporations may deduct from their federal tax otherwise payable an amount equal to two thirds of a provincial tax on income from logging operations not exceeding two thirds of 10 p.c. of the corporation's income from logging operations in the province. (At present only Ontario, Quebec and British Columbia impose logging taxes-see p. 1032.)

Income from the operation of a new mine, including wells for extracting potash by the solution method, is exempt from income tax during the first 36 months of commercial production. Income from manufacturing or processing businesses established in certain designated areas of slower growth during the period Dec. 5, 1963 to Mar. 31, 1967 is eligible for a three-year exemption from income tax.*

Corporations are required to pay their tax (combined income and old age security tax) in monthly instalments but the period during which they pay tax for a taxation year does not coincide with that taxation year. In each of the last eight months of their taxation year and in the following two months they pay one twelfth of their estimated tax for the year (such estimate is based on the taxable income of the previous year or the estimated taxable income of the year in progress). In each of the following two months, they pay one half of the estimated balance of the tax computed by reference to the income of the taxation year. In the sixth month following the end of their taxation year, the final return must be filed.

## Special Refundable Tax on the Cash Profits of Corporations $\dagger$

The 1966 Budget announced a temporary tax of 5 p.c. on the cash profits of corpora* tions payable monthly over an 18 -month period commencing in May 1966. The amounts collected under the measure will be repaid with interest at 5 p.c. after an interval of 18 to

[^332]36 months from receipt. The monthly paymenta are to be made on an estimated base computed by reference to the preaent or immediately preceding taxation year, subject to adjustment at the end of the year.

The base for the tax is the taxable income of the corporation leas federal and provincial taxes payable thereon, less a basic exemption of $\$ 30,000$, less principal payments due and made on debt of the corporation having original term of three yeara or more and having been contracted for under written arrangements in existence on Mar. 29, 1966 (this deduction is subject to certain limits), plus certain amounts that were deducted in arriving at taxable income but that do not deplete the cash position of the corporation (guch as capital cost allowances and depletion).

## Taration of Non-residents

A non-resident is liable for payment of income tax if he was employed or was carrying on business in Canada during a taxation year. The expression "carrying on business in Canada" includes (1) maintaining a permanent establishment in Canada, (2) processing goods even partially in Canada, and (3) entering into contracts in Canada. The taxable income of a non-resident individual thus derived is taxed under the same schedule of rates as Canadian resident individuals, and non-resident corporations deriving income from carrying on business in Canada are taxed on their taxable income attributable to operations in Canada at the same rates as Canadian resident corporations. (Tax treaties with some countries provide certain exemptions from tax for remuneration for services performed in Canada by residents or employees of these countries. They also prohibit Canada taxing profite of a non-resident enterprise unless that enterprise has a permanent establishment in Canada.)

Furthermore, the Income Tax Act imposes a tax at the rate of 15 p.c. on certain forms of income going from Canada to non-resident persons. It applies to interest (other than interest on government bonds issued after Apr. 15, 1966), dividends, rentals, royalties, income from a trust or estate and alimony, and applies whether the income goes to nonresident individuals or to corporations. The rate is reduced to 10 p.c. in the case of dividends paid by a company that has a degree of Canadian ownership and is also 10 p.c. on royalties from motion picture films. This non-resident tax is withheld at the source by the Canadian payer. Non-residents who receive only this kind of income from Canada do not file returns in Canada.

Profits earned in Canada by a non-resident corporation carrying on business through a branch or permanent establishment in Canada are taxed at the regular rates of corporation income tax and are also subject to an additional tax of 15 p.c. This additional tax is imposed on profits attributable to the branch after deducting therefrom Canadian federal and provincial income taxes and an allowance in respect of the net increase in capital investment in property in Canada.

## Gift Tax

The Income Tax Act levies a tax upon gifts. The rates range from 10 p.c. on an aggregate taxable value of $\$ 5,000$ or under to 28 p.c. on an aggregate taxable value of over $\$ 1,000,000$. Exemptions include complete exemption of gifts of $\$ 1,000$ or less per donee and a general deduction of $\$ 4,000$ from aggregate taxable value of gifts made in the year.

## Estate Tax

This tax applies to property passing, or deemed to pass, at death. All the property of persons who were domiciled in Canada before their death must be taken into consideration no matter where that property is situated; for persons dying domiciled outside of Canada only their property situated in Canada is subject to tax.

In computing the tax of a Canadian domiciliary, the value of the whole estate is first determined. Once the aggregate value of the eatate bas been determined, estate debta and certain expenses may be deducted. From the resulting "aggregate net value" there
may be deducted the amount of a basic exemption, which is increased where the deceased leaves a widow or dependent child, and also the amount of any charitable bequests to charitable organizations in Canada. After these deductions the amount left is the "aggregate taxable value" to which is applied the tax rates. From the tax so calculated may be deducted (1) a tax abatement in respect of property situated in a province that levies a succession duty, (2) a credit for gift tax paid on gifts made within three years of death (the value of which must be included in the aggregate net value of the estate), and (3) a credit for foreign taxes.

No estate vaiued at less than $\$ 50,000$ is subject to estate tax. This $\$ 50,000$ is not an exemption but the starting point for tax. The estate tax must not reduce the value of an estate after tax to less than $\$ 50,000$. The basic deductible exemption which applies to all estates of Canadian domiciliaries is $\$ 40,000$. This basic exemption of $\$ 40,000$ is increased to $\$ 60,000$ in respect of a deceased male survived by a spouse, or in respect of a deceased femsle survived by an incapacitated spouse and a dependent child. In both cases, there is an additional exemption of $\$ 10,000$ for each surviving dependent child. Finally, the basic exemption of $\$ 40,000$ is increased by $\$ 15,000$ for every surviving dependent child made an orphan by the death of the deceased.

The tax on the estates of Canadian domiciliaries is calculated by applying a graduated scale of rates. For an aggregate taxable value of $\$ 5,000$, or less, the rate is 10 p.c. For an aggregate taxable value of $\$ 100,000$, the tax is $\$ 19,000$ and anything between $\$ 100,000$ and $\$ 150,000$ is taxed at 24 p.c. At $\$ 2,000,000$ of taxable value, the tax is $\$ 816,500$ and the excess over $\$ 2,000,000$ is chargeable at the highest rate of 54 p.c.

The property situated in Canada of a deceased person not domiciled in Canada is subject to estate tax at a flat rate of 15 p.c. No deduction is allowed against the assessed value of such property except for debts specifically chargeable to it. However, there is a special provision that exempts all such property of less than $\$ 5,000$ value and also provides that the tax must not reduce the value of the property to less than $\$ 5,000$. (The Estate Tax Convention between Canada and the United States increases this figure to $\$ 15,000$.) As stated previously, there is an abatement from federal estate taxes otherwise payable, in respect of property situated in a province that levies succession duties. Where property is subject to provincial duties, the 15-p.c. tax is abated by 75 p.c. (At present this abatement is only 50 p.c. in Ontario and Quebec.*)

## Excise Taxes

The Excise Tax Act levies a general sales tax and special excise taxes. Both the sales tax and the special excise taxes are levied on goods imported into Canada and on goods produced in Canada. They are not levied on goods exported. The sales tax, which is at the rate of 8 p.c., $\dagger$ is levied on the manufacturer's sale price of goods produced or manufactured in Canada or on the duty-paid value of goods imported into Canada. For alcoholic beverages and tobacco products, the sale price for purposes of the sales tax includes excise duties levied under the Excise Act (see p. 1028). An old age security tax of 3 p.e. is levied on the same basis as the 8 -p.c. $\dagger$ tax, bringing the total sales tax to 11 p.c. $\dagger$

Many classes of goods are exempt from sales tax. Foodstuffs, electricity and fuels for lighting or heating are generally exempt is well as articles and materials used by public hospitals. The products of farms, forests, mines and fisheries are, to a large extent, exempt as well as most equipment used in farming and fishing. Materials consumed or expended in production are not taxed. Also, a variety of items are exempt from sales tax when purchased by municipalities. These and other exemptions are set forth in schedules to the Excise Tax Act.

The 1966 Budget announced that machinery and equipment used directly in the manufacture or production of goods would be relieved of tax over a two-year period. Effective Mar. 30, 1966, full exemption is extended to dies, moulds, jigs, fixtures and the cutting or

[^333]shaping parts of machines. On Apr. 1, 1967, a comprehensive list of other production machinery and equipment will become subject to a reduced rate of 6 p.c. and on Apr. 1, 1968, the same goods will be granted full exemption from the levy.

A number of articles are subject to special excise taxes in addition to the sales tax. Where these are ad valorem taxes they are levied on exactly the same price or duty-paid value as the general sales tax. Those levied at present are as follows:-


All the foregoing items, except the last, are also subject to the general sales tax of 8 p.c. and the old age security tax of 3 p.e. Cigarettes, cigars and tobacco are subject to further taxes, referred to as excise duties (see below).

## Excise Duties

The Excise Act levies taxes (referred to as excise duties) upon alcohol, alcoholic beverages and tobacco products produced in Canada. The customs tariff on such products imported into Canada includes a levy to correspond with the duties levied on domestic production. These duties are not levied on goods exported.

Spirits.-The duties are on a per-gallon basis in proportion to the strength of proof of the spirits. These duties do not apply to denatured alcohol intended for use in the arts and in industry, or for fuel, light or power, or for any mechanical purpose. The various duties are as follows:-

| On | .00 |
| :---: | :---: |
| On every galion of the strength of prool used in the manulac |  |
| Medicintes, extracts, pharmaceutical preparation | \$1.50 per gal. |
| Approved chemical compositions. | 15 cents per mal. |
| Spirits sold to a druggist and used in the preparation of prescripti | \$1.50 per gal. |
| Imported spirita when taken into a bonded manufactory in addition to other duties |  |

[^334]Canadian Brandy.-Canadian brandy, a spirit distilled exclusively from juices of native fruits without the addition of sweetening materials, is subject to a duty of $\$ 11$ per gallon.

Beer.-All beer or other malt liquor is subject to a duty of 38 cents per gallon.
Tobacco, Cigars and Cigarettes.-The excise duties make up nearly as large a part of the total tax on tobacco products as the special excise taxes already described. The rates are as follows:-


## Combined Effect of Excise Taxes and Excise Duties on Tobacco Products

Bringing together the taxes imposed on tobacco products under the Excise Tax Act and the duties imposed under the Excise Act gives the following total taxes:-

| C | $\$ 9.00$ per thousand (or 18 cents per pack of 20 cigarettes) plus the II-p.c. sales tar on the mapufacturer's sale price |
| :---: | :---: |
| Manufactured tobace | $\$ 1.15$ per lb. plus the It-p.c. salea tax on the manulacturer's sale price |
| C | $\$ 2.00$ per thousand plus the 15 -p.c. special excise tar and the $11-$ p.c. sales tay on the manufacturer's sale price. |

## Customs Duties*

Most goods imported into Canada are subject to customs duties at various rates as provided by tariff schedules. Customs duties, which once were the chief source of revenue for the country, have declined in importance as a source of revenue to the point where they now provide less than 10 p.c. of the total. Quite apart from its revenue aspects, however, the tariff still occupies an important place as an instrument of economic policy.

The Canadian Tariff consists mainly of three sets of rates, namely, British Preferential, Most-Favoured-Nation and General. The British Preferential rates are, with some exceptions, the lowest rates. They are applied to imported dutiable commodities shipped directly to Canada from countries within the Commonwealth. Special rates lower than the ordinary preferential duty are applied on certain goods imported from designated Commonwealth countries.

The Most-Favoured-Nation rates apply to goods from countries that have been accorded tariff treatment more favourable than the General Tariff but which are not entitled to the British Preferential rate. Canada has Most-Favoured-Nation arrangements with almost every country outside the Commonwealth. The most important agreement providing for the exchange of Most-Favoured-Nation treatment is the General Agreement on Tariffe and Trade.

The General Tariff applies to imports from countries not entitled to either the Preferential or Most-Favoured-Nation treatment. Few countries are in this category and in terms of trade coverage are negligible.

In all cases where the tariff applies there are provisions for drawbacks of duty on imports of materials used in the manufacture of products later exported. The purpose of these drawbacks is to assist Canadian manufacturers to compete with foreign manufacturers of similar goods. There is a second class of drawbacks known as "home consumption" drawbacks. These apply to imported materials used in the production of specified classes of goods manufactured for home consumption.

The tariff schedules are too lengthy and complicated to be summarized here but the rates that apply on any particular item may be obtained from the Department of National Revenue, which is responsible for administering the Customs Tariff.

[^335]
## Subsection 2.-Provincial Taxes

All of Canada's ten provinces impose a wide variety of taxes to raise the revenue necessary for provincial purposes. All provinces levy a tax on the income of individuals and corporations resident within their boundaries or deriving income from activities or operations carried out therein. Only the Provinces of Ontario and Quebec impose special taxes on corporations in addition to income tax and only the Provinces of Ontario, Quebec and British Columbia impose a tax on property passing at death; the remaining provinces receive payment from the Federal Government of their $75-$ p.c. share of estate tax levies. Under the terms of the existing Federal-Provincial Fiscal Arrangements, the Federal Government makes "equalization payments" to some provinces in recognition of the fact that the actual tax revenue from the fields of income tax, death duties and natural resource revenue in those provinces, measured on a per capita basis, is lower than the average per capita yield from these taxes in the two provinces where they produce the highest yield. However, resource revenues are treated as a negative adjustment; for those provinces that have above-average per capita revenues from resource revenues, a deduction is made in the equalization payment equal to 50 p.c. of the excess above the national average. For some provinces the equalization payments constitute a very important source of revenue.

Some of the more important provincial levies are reviewed briefly on the following pages.

## Individual Income Tax

All provinces levy a tax on the income of individuals who reside within their boundaries or who earn income therein. In nine of the ten provinces, these taxes are computed as a percentage of federal "basic tax" As previously explained, "basic tax" is federal income tax (excluding old age security tax) otherwise payable at full federal rates before the abatement under the Federal-Provincial Fiscal Arrangements and before allowance for the federal tax reduction passed in 1966. These provincial taxes are collected by the Federal Government on behalf of these provinces. In Quebec, provincial income tax is levied at graduated rates that progress from 5.2 p.c. on the first $\$ 1,000$ of taxable income to a maximum of 37.6 p.c. on the excess over $\$ 400,000$. The determination of taxable income for Quebec tax is based on exemptions and deductions similar to those for federal tax. The Province of Quebec collects its own tax.

The percentages that provincial income tax liability is of federal "basic tax" for 1966 are: Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Ontario, Alberta and British Columbia each 24 p.c., Quebec approximately 47 p.c., and Manitoba and Saskatchewan each 29 p.c.

## Corporate Income Tax

All provinces levy a tax on the profits of corporations derived from activities carried out within their boundaries. In all provinces except Ontario and Quebec the provincial tax imposed on taxable income in the province is determined on the same basis as for federal income tax. In Ontario and Quebec the determination of taxable profits for purposes of provincial tax follows closely the federal rules. The rate of tax in Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Alberta and British Columbia is 9 p.c. of corporate taxable income. The rate that applies in Manitoba and Saskatchewan is 10 p.c., in Ontario 11 p.c. and in Quebec 12 p.c.

Four of the ten provinces levy corporate income taxes at rates in excess of the abatement allowed by the Federal Government. This abatement is equal to 9 p.c. of corporate profits except in Quebec where it is 10 p.c. (see p. 1020). All provinces except Ontario and Quebec have signed agreements for the collection of their income taxes by the Federai Goverament.

## Tases on Alcoholic Beverages and Tobacco

Generally speaking, the sale of spirits in all provinces is made through provincial agencies operating as boards or commissions which exercise monopolistic control over
alcoholic beverages. The provincial mark-up over the manufacturer's price is the effective means of revenue. Beer and wine may be sold by retailers or government stores depending on the province but in all cases they contribute to provincial revenues.* The Province of Prince Edward Island imposes a tax of 10 p.c. on all beer, wine and spirits sold at retail, collected under authority of the Health Tax Act.

Newfoundland imposes a tax on tobacco sold at retail of one quarter of one cent per cigarette purchased; from one to five centa per cigar, depending on price; and one cent per half ounce or less of other tobacco. Prince Edward Island's tax on tobacco sold at retail is one fifth of one cent per cigarette purchased; from one to three cents per cigar, depending on price; and 10 p.c. of the retail price of all other tobacco purchased. Saskatchewan's tax on retail tobacco sales is one fifth of one cent per cigarette purchased; from one to five cents per cigar, depending on price; and one cent on every half ounce of other tobacco; the average rate of the tobacco tax is 10 p.c. Specific sales taxes on tobacco products are also levied in New Brunswick, Quebec, Manitoba, and Ontario.

## Retail Sales Taxes

Retail sales taxes are levied on the final purchaser or user and are collected by the retailer. Eight provinces now levy this type of tax at rates varying from 3 p.c. to 6 p.c. These provinces are Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Quebec, Ontario, Saskatchewan and British Columbia. These direct levies apply to tangible taxable commodities sold, with varying exemptions, for consumption in the province and to a few selected services, for example, to local telephone services in all provinces except Saskatchewan and to telecommunications and hotel and motel charges in Quebec.

## Amusement Taxes

Each of the provinces with the exception of Alberta, Saskatchewan, British Columbia and Quebec has a tax on admission to places of entertainment. In addition, there is generally a licence fee imposed on the operator or owner of these amusement places. The tax on admissions is within the range of 5 p.c. to 15 p.c.

## Gasoline and Diesel Fuel Oil Taxes

Each of the ten provinces imposes a tax on the purchase of gasoline by motorists and truckers. The rates vary from 12 cents per gallon in Alberta to 19 cents in Nova Scotia and Newfoundland. The amount of tax borne by one gallon of motor vehicle fuel in each province is as follows:-

|  | Gatoline | Diesel Fuel |  | Gasoline | Dicel Fuel |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | ets. | cts. |  | cto. | cta. |
| Newfoundland..... | 19 | 19 | Ontariof. | 16 | 22 |
| Prince Edward Island $\dagger$ | 18 | 18 | Manitoba. | 17 | 20 |
| Nova Scotia.......... | 19 | 27 | Saskatchewan.. | 15 | 188 |
|  | 18 | 23 | Alberta., ${ }_{\text {a }}$ | 12 | 14. |
| Quebec. . . . . . . . . . . . . | 16 | 22 | British Columbin | 13 | 15 |

The British Columbia net tax rate (after refund) on gasoline used in logging trucks off highway, in power units of motor vehicles for stationary industrial use, and in vehicles used by amputees, paraplegics and certain war amputees is 1 cent per gallon. Gasoline coloured purple for certain off-highway use (including marine) and motor fuels, being any fuel except gasoline not consumed on provincial highways, is also taxed at 1 cent per gallon. Fuel oil used for heating puposes is taxed at $\frac{1}{2}$ cent per gallon.

[^336]
## Motor Vehicle Licences and Fees

Each province levies a fee on the annual registration of motor vehicles, which is compulsory. Upon registration a vehicle is issued with licence plates. The rates of fee vary from province to province and, in the case of passenger cars, may be assessed on the weight of the vehicle, the wheel base, the year of manufacture, the number of cylinders of the engine, or at a flat rate. The fees for commercial motor vehicles and trailers are based on the gross weight for which the vehicle is registered, i.e., the weight of the vehicle empty plus the load it is permitted to carry. Every operator or driver of a motor vehicle is required to obtain a driver's licence and pay a fee therefor. The licences are valid for periods of from one to five years and the fees vary from $\$ 1$ to $\$ 6$ a year.

## Taxes on Mining Operations

All provinces except Prince Edward Island levy taxes of various kinds on mining operations. All provinces except Prince Edward Island and Alberta impose a tax on the income of firms engaged in mining operations in general or in specific kinds of mining operations. The Provinces of British Columbia, Alberta, Saskatchewan, Manitoba and Ontario impose a tax on the assessed value of minerals or a flat rate per acre of mining property. Manitoba imposes rates of from 6 p.c. to 11 p.c. on mining royalties.

## Tax on Logging Operations

The Provinces of Ontario, Quebec and British Columbia levy a tax on the income from logging operations of individuals, partnerships, associations or corporations engaged in this activity. In Quebec and Ontario the rate is 10 p.c. on net income where in excess of $\$ 10,000$ and in British Columbia the tax is 10 p.c. on net income where in excess of $\$ 25,000$. In Ontario and Quebec one third and in British Columbia 18 p.c. of the tax is allowed as a deduction from provincial corporate income tax or, in Quebec, from the provincial income tax, and the remainder is deductible from federal income tax.

## Business Taxes

The Province of Quebec imposes a tax of one tenth of 1 p.c. on paid-up capital of corporations and Ontario Ievies a similar tax at the rate of one twentieth of 1 p.c.

The Provinces of Quebec and Ontario have a place-of-business tax. In Quebec, the tax is generally $\$ 50$; it is reduced to $\$ 25$ when the paid-up capital is less than $\$ 25,000$; and in the case of loan companies, the tax is $\$ 100$ when capital paid up is $\$ 100,000$ or more. In Ontario, the tax for each permanent establishment is the lesser of $\$ 50$ or one twentieth of 1 p.c. of paid-up capital of the corporation involved, but the total of the capital tax and the place-of-business tax cannot be less than $\$ 20$. Ontario also imposes an office tax of $\$ 50$ on every corporation that does not maintain a permanent establishment in the proviace but merely maintains a buying office, or merely holds certain provincial licences, or merely holds assets. A corporation that does not maintain a permanent establishment in Ontario but is represented by a resident employee or agent who is not deemed to operate a permanent establishment of the corporation in the province must pay an office tax of $\$ 50$ or one tenth of 1 p.c. of the total amount of its gross Ontario sales or revenue if less than $\$ 50,000$, subject to a minimum office tax of $\$ 5$.

Both provinces levy special taxes on certain kinds of companies such as banks, railway companies, express companies, trust companies and sleeping-car, parlour-car and dining-car companies. In Ontario, these special taxes (except the tax payable by insurance corporations calculated on gross premiums) and the capital and place-of-business taxes are payable only to the extent that they exceed the corporate income tax otherwise payable.

The Province of Prince Edward Island charges special annual licence fees to most insurance companies, banks, acceptance companies, chain theatres and chain stores, steamship companies, telephone, telegraph and electric light companies and brokers, as well as nominal licence fees to other incorporated companies, the latter being similar to filing fees in other provinces.

## Land Transfer Taxes

The Provinces of Alberta and Ontario levy a tax based on the value of the consideration at which ownership of land is transferred. In Ontario, two fifths of 1 p.c. tax is imposed for land transfer that is $\$ 25,000$ or over; one fifth of 1 p.c. under $\$ 25,000$. Other provinces do not have a land transfer tax but most have a scale of charges or fees imposed upon registration of transfer of land. These fees are not regarded as taxes since a service is rendered or an assurance given with each charge.

## Tax on Security Transfers

The Provinces of Ontario and Quebec levy a tax on the sale price of securities transferred; the rates in each province are:-

| Shares sold, translerred or assigned valued at- |  |
| :---: | :---: |
| Under $\$ 1$. | 1/10th of 1 p.e. of value |
| \$ 1 to \$ 5 . | 4 cent per share |
| \$ 5 to $\$ 25$. | 1 eent per share |
| \$25 to $\$ 50$. | 2 cents per share |
| \$50 to \$ 75. | 3 cents per share |
| \$75 to \$150., | 4 cents per share |
| Over \$150. | 4 cents per share plus 1/10th of 1 p.e. of value in excess of $\$ 150$ |
| Bouds and debeutares.. | 3 cents for every $\$ 100$ or fraction thereof of par value. |

## Tax on Premium Income of Insurance Companies

All ten provinces impose a tax of 2 p.c. on the premium income of insurance companies relative to risks incurred in the province.

## Succession Duties

Only the Provinces of Ontario, Quebec and British Columbia levy succession duties. These duties are a tax upon the right to succeed to property and are assessed upon the interest or benefit passing at death to an heir or beneficiary. The three provinces impose succession duties on all property situated in the province belonging to the deceased and passing at his death whether the deceased was domiciled in the province or elsewhere. Personal property wherever situated of a person dying domiciled within the province is also liable if passing to a successor resident or domiciled in the province.

The rates of succession duty are generally governed by the value of the estate, the relationship of the beneficiary to the deceased and the amount going to any one person. The rate of tax increases as the degree of relationship between the deceased and his successor becomes more remote.

Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Manitoba, Saskatchewan and Alberta, while not imposing succession duties, each receives 75 p.c. of Federal Government eatate tax levies on property situated within its borders.

## Provincial Property Taxes

In unorganized (non-municipal) areas, British Columbia levies property taxes at varying rates according to class for provincial revenue. Improved, forest and tree-farm lands are taxed at 1 p.c. of assessed value; farm land at, one half of 1 p.c.; wild land at 3 p.c.; coal land at 2 p.c. (non-operating) or 7 p.c. (operating); and timber land at $1 \frac{1}{2}$ p.c. In unorganized (non-municipal) areas, Ontario levies a property tax of $1 \frac{1}{2}$ p.c. of assessed value; the minimum annual tax in respect of any land is $\$ 6$. New Brunswick levies a tax of $\$ 1.50$ per $\$ 100$ market value assessment on all land and buildings in the province and a similar tax on business occupancy, to finance education, health, welfare and justice services. Nova Scotia also imposes property taxes of limited application.

## Race Track Taxes

Ontario levies a tax on operators of race meets and upon holders of winning ticiets issued under the pari-mutuel system. The tax on race meeting operators is imposed at the rate of $\$ 1$ for each day the meet is conducted. Holders of winning tickets must pay a tax equal to 6 p.c. upon the amount which would be payable to them if no percentage were deducted by the person holding the race meeting. A number of other provinces levy a pari-mutuel tax on money bet in the province on horse races: in Newfoundland the rate is 11 p.c., in Prince Edward Island $10 \frac{1}{2}$ p.c., in New Brunswick $5 \frac{1}{2}$ p.c., in Manitoba 10 p.c., in Alberta and Saskatchewan 5 p.c., and in Quebec 7 p.c. on ordinary pools and 9 p.e. on special pools (quinella and daily-double). In British Columbia the tax is 12 p.c. but the province returns $2 \frac{1}{2}$ p.c. of money bet to horsemen and track operators for purses, etc.

## Subsection 3.-Municipal Taxes

The municipalities in Canada levy taxes on the owners of property situated within their jurisdiction according to the assessed value of such property. Methods of determining assessed value vary widely but for taxation purposes it is generally considered to be a percentage of the actual value or, as in Nova Scotia and throughout most of New Brunswick, of the actual market value. The revenues from such taxes are used generally to pay for street maintenance, schools, police and fire protection, snow removal in certain communities and other community services; in New Brunswick the municipal levy is used only for property service. Special levies are sometimes made on the basis of street frontage to pay for local improvements to the property such as sidewalks, roads and sewers. Not only is there a widespread difference in the bases used for property tax but there is also a wide variety of rates applied, depending on the municipality.

In addition to the taxes described above, municipalities usually impose a charge for the water consumption of each property holder or a water tax based upon the rental value of the property occupied. There are no municipal income taxes although certain localities have retained the use of a poll tax. In Newfoundland, Quebec and Saskatchewan, municipalities are empowered to levy an amusement tax on the admission of persons to places of entertainment, although the amusement tax is generally a provincial preserve (see p. 1031). Electricity and gas are taxed at the consumer level in some western municipalities and coal and fuel oil for heating purposes are chargeable in urban areas of Newfoundland. Telephone subscribers are subject to a special levy in Montreal and certain Ontario municipalities impose a tax on the gross receipts of telephone companies.

In most municipalities, a tax is levied directly on the tenant or the operator of a business. In general, business tax rates are lower than those applying to property. Three bases of assessment are in use-a fraction of the property assessment, the annual rental value of the premises, or the area of the premises. Certain municipalities may charge a licence fee instead of a business tax but others charge both a licence fee and a business tax.

## Subsection 4.-Miscellaneous Levies

These are not generally referred to as taxes but they are similar to taxes in many ways.

## Unemployment Insurance

For the past twenty-six years, a national program of unemployment insurance has been in operation in Canada. Essentially, it provides relief to those qualified persons who temporarily find themselves without work. It is administered by a federal commission appointed for this purpose and financed by equal contributions from employers and employees plus a contribution from the Federal Government. The amount paid into the fund by employee and employer is directly proportional to the weekly wages of the employee. The rates of contributions, together with statistics on the operation of the program, are given at pp. 769-771.

## Workmen's Compensation

Legislation in force in all provinces provides compensation for personal injury suffered by workmen as a result of industrial accidents. In general, these provincial statutes establish an accident fund administered by a Board to which employers are reguired to contribute at a rate proportional with the hazards of the industry. See also pp. 772-773.

## Hospital Insurance

A federal-provincial hospital insurance plan has been adopted by each of the ten Canadian provinces. Under this arrangement, the Federal Government pays approximately one half of the cost of hospitalization for patients who are participants under the plan. The provinces meet the remainder of the cost. Provincial revenues for this purpose are raised by various means. The Province of Quebec has increased its personal and corporation income tax. Certain provinces require the deduction of a monthly premium from the wages of their residents as a contribution or premium for the plan. In such provinces non-salaried people must also pay the premium directly if they wish to be covered by the plan. In some other provinces the proceeds of a retail sales tax are earmarked in whole or in part for the support of the hospital plan. See also pp. 281-284.

## Section 3.-Federal Government Finance

Subsection 1 of this Section contains financial statistics of the Federal Government prepared as far as possible in accordance with the classifications, concepts and defnitions used in the preparation of provincial and municipal finance statistics. These tables differ from the information presented in Subsection 2 in that the latter has been extracted directly from the Canada Gazette. Detailed reports published by the Dominion Bureau of Statistics provide reconciliations of revenue, expenditure and debt as set out in Subsections 1 and 2. The Canada Gazetle presentation is included because there is interest in and use for information on this basis.

## Subsection 1.-DBS Statistics of Federal Government Finance

Revenue and Expenditure.-Table 4 shows details of net general revenue of the Federal Government for the years ended Mar. 31, 1964 and 1965.
4.-Details of Net General Revenue of the Federal Government, Years Ended Mar. 31, 1944 and 1965

| Source | 1964 | 1965D | Source | 1964 | 8965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Taxeg- | \$ 000 | \$000 |  | \$000 | \$ 000 |
| Income- |  |  | $\xrightarrow{\text { Privieges, }}$ mits Licences and Per- |  |  |
| Corporation ${ }^{\text {d }}$ | 1.374,708 | 1,669,065 | Natural resou | 5,232 | 4,827 |
| Individual | 2,167,674 | 2,535,182 | Other . . . . . . . . | 23,633 | 23,356 |
| On interest, dividends and other income coing abroad | 124,500 |  | Sales and services other than | 67.051 |  |
| General sales ${ }^{1}$............... | 1,277,815 | 1,587,761 | Finstitutional penalties. | 1,958 | 109,094 1,984 |
| Excise Duties and Special Excise Tares- | 1,27,815 | 1,587, 61 |  | 62. 594 | 19,639 |
| Alcoholic beverages....... | 233,407 | 239,179 | Receipus from government en- | 124.851 | 139,445 |
| Tobacco. | 390,636 | 394,627 | Bullion and coinage............ | 10.625 | 15,032 |
| Other...... | 41,721 | 45,437 | Postal gervice................. | 235.885 | 263,758 |
| Estate tarem...... | ${ }_{90} 881.671$ | 622, 102 | Other revenue............. | 13,228 | 14,650 |
| Other. | ${ }^{218}$ | 8,140 | ceipts..................... | 27,695 | 21,900 |
| Totals, Taxes, | 6,282,792 | 7,325,837 | Totals, Net General Bevenue. | 6,854,914 | 7,939,322 |

[^337]Table 5 gives details of the amounts paid by the Federal Government to provincial governments, territories and municipal corporations for the year ended Mar. 31, 1965 and Table 6 gives details of expenditure by function for the years ended Mar. 31, 1964 and 1965.

5．－Payments by the Federal Government to Provincial Governments，Territories and Municlpal Corporations，Year Ended Mar．31，1385p

| Payee and Purpose | Ned． | P．E．I． | N．S． | N．B． | Que． | Ont． | Man． | Sask． | Alta． | B．C． | All Provinces | Y．T． | N．W．T． | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \＄000 | \＄ 000 | \＄000 | \＄＇000 | \＄000 | \＄${ }^{\prime} 000$ | \％ 000 | \＄＇000 | \＄000 | \＄ 000 | \＄000 | \＄000 | \＄000 | \＄000 |
| Proylnclat Gevernments and Territories |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Federal－provincial Gnancial arrange－ ments． | 19，248 | 5，625 | 29，965 | 25，380 | 114，898 | 16，273 | 25，483 |  |  | 356 | 272484 | 2，3171 |  | 277.473 |
| Share of income tar on power otilities．．． | －243 | ， 60 | ${ }^{7} 738$ | ， 56 | －4，265 | 1，064 | 25，483 | $13$ | 2，006 | 284 | 2， 9,679 |  |  | 9，679 |
| Subsidies．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | $20.156^{2}$ | 4，157 ${ }^{\text {s }}$ | 12，632 ${ }^{\text {a }}$ | 12，245 ${ }^{3}$ | 3，964 |  | 2，117 | 2，124 | 2，887 | 1，673 |  |  | － |  |
| Totala，Above Iteme． | 39，647 | 9，842 | 43，335 | 37，881 | 123，127 | 21，961 | 27，650 | 27，790 | 15，396 | 2，313 | 348，742 | 2，317 | 2，672 | 353，781 |
| Granta－in－Aid and Shared－Cost Contri－ butions－ <br> Transportation－ <br> Trans－Canada Highwsy． <br> Roads leading to resources．．． <br> ．．．．．．．．．． <br> Other transportation． | $\begin{array}{r} 22,765 \\ 750 \\ 151 \end{array}$ | $\begin{gathered} 1,108 \\ 515 \\ - \end{gathered}$ | 4,714-461 | $\begin{aligned} & 8,046 \\ & 2,070 \end{aligned}$ | $\begin{array}{r} 32,049 \\ 1,011 \\ 225 \end{array}$ | $\begin{aligned} & 3,690 \\ & 1,85 \\ & 1,897 \end{aligned}$ | 208750 | 39411$-\quad$ | 96370148 | 3,37029444 | 76,0856,0624,536 | － | 二 | $\begin{array}{r} 76,085 \\ 6,082 \\ 4, \$ 36 \end{array}$ |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Health－ <br> Hospital insurance and diagnoatic services． <br> Hospital construction． | ${ }^{9,624} 8$ | 2,10238 | 15，902 | 13.751914 | $\begin{array}{r} 128,159 \\ 5,962 \end{array}$ | $\begin{array}{r} 151,478 \\ 6,978 \end{array}$ | $\begin{array}{r} 20,948 \\ 1,048 \end{array}$ | $\begin{array}{r} 23,526 \\ 911 \end{array}$ | 31,4482,523 | 36,0571,633 | 432,89521,468 | ${ }^{308}$ | 68044 | 433,88321,512 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| General Health Grants－ General public health．．． | 336 | 177 | 722137 | 524 | 2，741 | 4.145836 |  | 646 | 1，135 | 1，375 | 12，720 | － 14 | 61-3 | 12,7813,393 |
| Tuberculosis control． | 159 | 128 |  | 129 | 1,3312,978 |  | 171440 | $\frac{144}{}$ | 210 | 1，238 | $\begin{array}{r}3,378 \\ \mathbf{8} 835 \\ \hline\end{array}$ |  |  |  |
| Mental health．．．．．． | 179 | 73 | 137 372 |  |  | 238 2.584 |  |  |  | 670136 |  | ${ }^{14}$ |  | 8，667 |
| Professional training | 101 | 13 | ${ }^{44}$ | 60 109 | 823 <br> 660 <br>  |  | $-^{78}$ | 87160 | 135237 |  |  | 二 | 53 | 1,9332,5501,648 |
| Cancer contron．．．．．．．．．．．．．．．．．． | 15 | 15 9 | 64 144 | 109 25 | 660 468 |  | 109 |  |  | 353 183 | 2,547 1,648 | － |  |  |
| Medical rehabilitation and crip－ | $\begin{array}{r} 110 \\ 55 \\ 25 \end{array}$ | 3371 | $\begin{array}{r} 102 \\ 83 \\ 23 \end{array}$ | $\begin{gathered} 92 \\ 45 \\ 2 \end{gathered}$ | $\begin{aligned} & 768 \\ & 515 \\ & 194 \end{aligned}$ | 106640396238 | $\begin{array}{r} 130 \\ 61 \\ 94 \end{array}$ | 71777018 | 788888 | 2629592 | 2,2701,409$\mathbf{5 7 4}$ | 二 | $-{ }^{2}$ | $\begin{array}{r}2,272 \\ 1,409 \\ \hline 574\end{array}$ |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Child and maternal health Other health． |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Social Weliare－ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Old age assistance．．． | $\begin{array}{r} 2,221 \\ 300 \\ 750 \\ 4,704 \\ 34 \end{array}$ | $\begin{array}{r} 509 \\ 51 \\ 360 \\ 281 \\ 28 \end{array}$ | $\begin{array}{r} 2,303 \\ 510 \\ 1,447 \\ 1,863 \\ 72 \end{array}$ | $\begin{array}{r} 2,303 \\ 457 \\ 988 \\ 1,414 \\ 68 \end{array}$ | $\begin{array}{r} 18,589 \\ 1,893 \\ 9.091 \\ 41,016 \end{array}$ | $\begin{array}{r} 10,465 \\ 1,779 \\ 7,378 \\ 21,001 \\ 359 \end{array}$ | $\begin{array}{r} 2,329 \\ 259 \\ 689 \\ 6,399 \\ \mathbf{5} 349 \end{array}$ | $\begin{array}{r} 2,294 \\ 256 \\ 785 \\ \mathbf{7 , 5 8 6} \\ \mathbf{4 7 1} \\ \hline 171 \end{array}$ | $\begin{array}{r} 2,901 \\ 312 \\ 830 \\ 9,211 \\ 121 \end{array}$ | $\begin{array}{r} 2,991 \\ 1,972 \\ 17,958 \\ 1858 \\ 85 \end{array}$ | $\begin{array}{r} 44,905 \\ 5,589 \\ 23,347 \\ 109,383 \\ 1,167 \end{array}$ | 1431272 | 72331898 | 44,9918,62823,366107,5531,187 |
| Blind persons＇allowances． |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Disabider and |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Other social welfare． |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Recreation－ | ${ }^{37}$ | $-56$ | $-38$ | $\begin{array}{r} 24 \\ 83 \\ 953 \end{array}$ | 二 | －${ }_{56}$ | $-_{64}$ | $-^{30}$ | 35-41 | -4017 | $\begin{array}{r}59 \\ 416 \\ 476 \\ \hline 976\end{array}$ | $\begin{array}{r} 13 \\ 15 \\ 222 \end{array}$ | $\begin{array}{r} 8 \\ 19 \\ 19 \end{array}$ | 804501,217 |
| Campground and picmic area devel－ opments $\qquad$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Fitness and amateur Bport． Other recreation． |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Teoknical sad vocational training－ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 811 |  |  | 1，858 | 22，075 | 18，140 | 478 | 949 | 4，860 | 4，544 | 52，737 | 21 | 10 | 62，768 |



[^338]
## 6.-Details of Net General Expenditure of the Federal Government, Years Ended Mar. 31, 1964 and 1965


${ }^{1}$ Includes pensions paid from the Old Age Security Fund. ${ }^{2}$ Unconditional payments; grants for specific purposes are classified by function. See Table 5 for details of all grants to provincial governments and municipal corporations.

Debt.-In Table 7, direct debt represents total liabilities less sinking funds and indirect debt consists of guarantees of direct debt of other authorities by the Federal Government. Table 8 gives the gross bonded debt of the Federal Government and the average interest rates and terms of issue as at Mar. 31, 1962-65, together with place of payment.

## 7.-Direct and Indireet Debt (less Sinking Funds) of the Federal Government as at Mar. A1, 1962-85

| Nature of Debt | 1962 | 1063 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: |
|  | \$ 000 | \$ 000 | \$ 000 | \$ 000 |
| Funded Debt- Dlrect Debt |  |  |  |  |
| Bonded debt. | 15,060,736 | 15,796, 838 | 16,510,097 | 16,838,214 |
| Leas sinking funds | 15,432 | 15 88.818 |  | - 5 5,441 |
| Net funded debt.... | 15,041,304 | 15,774,524 | 16,510,097 | 16,832,773 |
| Short-term tressury billst | 1,885,000 | 2,165,000 | 2,230,000 | 2,140,000 |
| Acoounta and other payables. | 1,104,607 | 1,468,887 | 1,447,585 | 1,213,170 |
| Annuity, inguratce and pension accoumt | 4,258,100 | 4,748,506 | 5,132,423 | 5,678,796 |
| Other liabilities........ | 363,403 | 416,767 | 430,488 | 481,760 |
| Totals, Direet Debt (less Slnking Funds) | 22,65\%,414 | 2k,5\%3,694 | 25,750,403 | 24,344,432 |
| Indirect Debt |  |  |  |  |
| Guaranteed bouds or debentures. | 1,636,115 | 1,381,361 | 1,377,611 | 1,368,298 |
| Net gusass ainking funds. | 1, 636,115 | $1.3 \overline{381} .361$ | 1,377,611 | 1. 768,298 |
| Guaranteed bank loass.......... | 1, 168,549 | 1, 141,353 | 1,219,039 | 1,882,018 |
| Guaranteed insured loans under National Housing Act, 1954... | 3,640,000 | 4,123,000 | 4,499,000 | 4,934,000 |
| Guaranteea under Export Credita Insurance Act | 291,700 | 333,646 | 378,096 | 488,644 |
| Other guarantees................... | 11,300 | 12,976 | 14,491 | 15,888 |
| Totals, Indirect Deht (less Slnking Funds): | 5,747,655 | 5,942,336 | 6,488,237 | 7,068,803 |
| Totals, Direet and Indirect Debt (Iess Sinking Funds). | 28,400,059 | 80,566,030 | 32,238,840 | *3,413,262 |
|  | 1 | \% | \% | 1 |
|  | 1,220 | 1,300 | 1,339 | 1,346 |
| Indirect debt (lese sinking funds) per cepits..................... | 310 | 317 | 337 | 361 |

${ }^{1}$ Having a term of three or six montha. $\quad$ Excluded depoaits of chartered banks in Bank of Canada.
8-Gross Bonded Debt of the Federal Government, Average Interest Rate and Term of Issue, and Place of Payment as at Mar. 31, 1962-65

| Item | 1962 | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: |
| Bonded debt............................................. . $\mathbf{s}^{\prime} 000$ | 15,060,736 | 15,796,836 | 16,510,097 | 16,838, 214 |
| Averste interest rate..................................... p. p. . | 4.01 | 4.13 | 4.27 | 4.49 |
| Average term of isaue. . . . . . . . . . . . . . . . . . . . . . . . . . . . yrs. | 12.18 | 13.36 | 13.08 | 13.29 |
| Place of Payment- |  |  |  |  |
| Canada. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . \$'000 | 14,930,570 | 15,285,847 | 18,183, 692 | 16,461,809 |
| New York.,....................................... . . | 98, 175 | 376,405 | 376,405 | 376,405 |
| London (Ensland).................................... * | 31,991 | 34,584 | - | - |

## Subsection 2.-Public Accounts Statistics of Federal Government Finance

The figures of Tables 9 and 11, giving details of revenue and of assets and liabilities, respectively, of the Federal Government for the fiscal years ended Mar. 31, 1964-66, and the figures of Table 10, giving details of Federal Government expenditure for the years ended Mar. 31, 1965 and 1966, are taken from the Canada Gazelte. Because of reorganization in Federal Government Departments and the necessary changes in the Public Accounts, it is not possible to present data for previous years on a comparable basis. It should be noted that these figures relate, of course, to departments and agencies as they were organized before the passing of the Government Organization Act, which received Royal Assent on June $16,1966$.

## 9.-Revenue of the Federal Government, Years Ended Mar. $\mathbf{3 1 , 1 9 6 4 - 6 6}$

| Revenue | 1964 | 1985 | 1966 |
| :---: | :---: | :---: | :---: |
|  | * | \$ | \$ |
| Tax Revenue- |  |  |  |
| Customs import duties (net). | 581,441,461 | 622,101,883 | 685,519,390 |
| Excise duties. | 393,326,182 | 411,402,145 | 445, 885,434 |
| Income tax. | 3,248,530,748 | 3,770, 814,463 | 3,919,095,260 |
| Personal). | 1,885,078, 685 | 2.108,231,917 | 2,142,456,230 |
| Corporation' | 1,258, 957.490 | 1,585,814,601 | 1,606,620, \$28 |
| On dividends, interest, ete., going ab | 124.699.62t | 148,717, 948 | 170,018,708 |
| Sales tax (net) ${ }^{\text {a }}$. | 946,054,797 | 1,204,609,984 | 1,398, 128,981 |
| Eatate tax, including succession | $90,671,283$ $273,507,313$ | $88,625.641$ $268,222.184$ | $108,352,377$ $296,338,710$ |
|  |  |  |  |
| Totals, Tax Revenue. | 5,533, 531,782 | 6,366,776,250 | 6,850,320,092 |
| Non-tax Revenue- |  |  |  |
| Post Office (net).. | 200,717,142 | 230, 435.714 | 237,482,296 |
| Return on investments | 366,412,592 | 422,693,741 | 438, 254,129 |
| Ballion and coinage | 9,717,080 | 12,298,922 | 11,217.545 |
| Other. | 142, 825,443 | 148, 105, 160 | 158,546, 142 |
| Totala, Non-tax Revenue | 719,672,257 | 813,533,537 | 845,500,212 |
| Grand Totals, Revenue. | 6,253,204,039 | 7,130,309,787 | 7,695,823, 204 |

1 Excludee tax credited to the Old Age Security Fund.
10.-Expenditure of the Federal Government, Years Ended Mar. 31, $\mathbf{1 8 6 5}$ and 1966

| Expenditure | 1965 | 1966 |
| :---: | :---: | :---: |
|  | \% | \$ |
| Defence Erpenditures. | 1,585,643,748 | 1,594,981,388 |
| National Defence. | 1,537,834,863 | 1,548,446,784 |
| Defence Production. | 27,308,885 | 22,636,820 |
| Technological assistance to Canadian defence industry | 20,500,000 | 23,897,779 |
| Nen-defence Expenditures. | 5,632,630,804 | 6,139,814,143 |
| Agriculture. | $165,728,844$ | 186,263,516 |
| Atomic Energy Control Board. | 1,407,455 | 1,784,132 |
| Atomic Energy of Canada Limited resestch program. | 45, 157,388 | 52,666,043 |
| Auditor Gederal. | 1,589,889 | 1,741,001 |
| Board of Broadcast Governors. | 367, 645 | 382,787 |
| Canadian Broadcasting Corporation. | 87,969,198 | 97,458,915 |
| Central Mortgage and Housing Corporation. | 14,852.238 | 21,571,958 |

10.-Expenditure of the Federal Government, Years Ended Mar. 31, 1965 and 15ec-concluded

| Expenditure | 1965 | 1966 |
| :---: | :---: | :---: |
|  | \$ | \$ |
| Non-defence Brpenditures-concluded |  |  |
| Chief Electoral Officer. | 578,175 | 12,953,140 |
| Citizenship and Immigration.. | 180,996,919 | 238,567,080 |
| Civil Service Commission. | 6,226,358 | 7,985,854 |
| Defence Production. | 3,172,452 | 8,545,621 |
| Dominion Bureau of Statistics. | 13,493,107 | 15,591, 823 |
| Esternal Affairs. | 131,188,586 | 152,545,955 |
| Finance. | 1,622,642,345 | 1,850,079,433 |
| Administration and general. | 8,27\%,565 | 10,058,775 |
| Public debt charges. | 1,051,290.687 | 1,110,857,197 |
| Fiscal, tax-sbaring, subsidy and other payments to provinces. | 358.357,082 | 465,893, 282 |
| Other, | 404,722, 861 | 269,7\%0,181 |
| Fisheriea. | 26,503,261 | 34,526.476 |
| Forestry. | 49,754,438 | 57,134,577 |
| Governor Geperal and Lientenant-Governors, | 648,703 | 690,556 |
| Industry. | 3,288,581 | \$,403,370 |
| Insurance. | 1,445,862 | 1,512,059 |
| Justice. | 10,644,700 | 11,367,814 |
| Labour. | 23,402,111 | 23,993,711 |
| Legislation. | 14,214,867 | 14,71t,823 |
| Mines and Technical Surveys. | 94,324,195 | 107,357,514 |
| National Film Board. | 6,353,633 | 6,891,335 |
| National Gallery of Canads. | 1,303,734 | 1,815,626 |
| National Healtb and Welfare. | 1,300,598,426 | 1,175,122,029 |
| Administration and general | 2,288,498 | 2,505,929 |
| Health services. | 498,519,599 | 376,757,451 |
| Medical services. | 32, 586,787 | 57,506,504 |
| Food and drug services. | 4.970,989 | 6,360,491 |
| Welfare services. | 765,192,669 | 757,091,814 |
| National Research Council including Medical Research Council. | 56,641,725 | 74,387,029 |
| National Revenue. | 80,908,544 | 94,971,980 |
| Northern Affairs and National Resources. | 127,306,117 | 156,433,733 |
| Post Office. | 210,458,702 | 240,206,458 |
| Privy Council. | 8.175,312 | 8,981,878 |
| Public Archives and National Library | 1,507,268 | 1,973,514 |
| Public Printing and Stationery | 2,732,686 | 3,053,651 |
| Publie Works. | 234,411,993 | 275,147,218 |
| Secretary of State, | 22,988,275 | 25,887,786 |
| Solicitor Genersl. | 115,476,877 | 138,834,027 |
| Trade and Commerce. | 41,303,543 | 30,481,965 |
| Trangport. | 470,813,295 | 532,498,872 |
| Unemployment Ingurance Commission. | 94,792,046 | 98,037,727 |
| Veterans Allairs. | 352,098,361 | 369,652,156 |
| Grand Totals, Expenditures. | 7,218,274,557 | 7,734,795,5*5 |

## 11. Statement of Assets and Liablities of the Govermment of Canada, as at Mar. 31, 1964-66

| Item | 1964 | 1965 r | 1068 |
| :---: | :---: | :---: | :---: |
|  | \% | \$ | * |
| Assets |  |  |  |
| Current Assets- <br> Cash. | 984,642,872 | 850,282, 184 | 759,080,004 |
| Departmental Working Capital Advances and Revolving Funds. | 168,806, 488 | 134,150,957 | 120,576,475 |
| Securities held for the eecurities investment account at amortized coat | 99,859,788 | 57,119, 872 | 81,475,697 |
| Other current asseta. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 33,753,992 | 29, 134,994 | 54, 861,735 |
| Totals, Current Asgeta. | 1,287,083, 140 | 1,070,687,957 | 1,015,993,911 |
| Cash in blocked currency. |  |  | 1,002,400 |
| Advances to the Excbange Fund Account. ...................... | 2,601,000,000 | 2,621,000,000 | 2,696,000,000 |
| Sinking fund and other investments held for retirement of unmatured debt. | , | 5,441, 198 | , |
| Invertment in special United States of America securitie- |  |  |  |
| Columbis River Treaty ...................................... | - | 219,479,161 | $187,191,661$ $34,853,000$ |
| Loans to and Investments in Crown Corporations.............. | 4,584,194,507 | 4,914,534,120 | 5,540,921,266 |
| Loans to national govermmenta. . . . . . . . . . . . . . . . . | 1,195,884,799 | 1,288,343, 607 | 1,343,365,960 |
| Other Loans and Investmente- |  |  |  |
| Subscriptions to Capital of, and working Capital Advances and Losne to, International Organizations. | 702,130,003 | 709,753,536 | 724, 695,231 |
| Loans to provincial governments............................i | 113,651,578 | 98,435,807 | 96,723,106 |
| benefits).. | 216,970,307 | 231, 322, 189 | 256,191,461 |
| Miscellaneous.................................................... | 165,064,212 | 99,869,916 | 185, 802,890 |
| Totals, Other Loans and Investmente.................. | 1,107,816,100 | 1,139,381,428 | 1,263,212,688 |
| Securities held in trust........................................... | 38,881,823 | 53,059,935 | 167,447,012 |
| Deferred Charges- |  |  |  |
| Unamortized portions of actuarial deficienciesCanadian forces auperannuation account. |  |  | 53,601,200 |
| Public aervice superannuation account...... | 276,661,000 | 39,920,800 | 93, 620.600 |
| Royal Canadian Mounted Police snperannuation account. |  | 4, 153,600 | 3,115,200 |
| Uuamortized loan flotation costs. . . . . . . . . . . . . . . . . . | 123,699,586 | 110.749,442 | 106,217,789 |
| Totals, Deferred Cbargea, | 400,360,586 | 208,585,442 | 250, 554,789 |
| Suspense aocounta. <br> Capital assets. <br> Insctive loang and investments. | $\begin{array}{r} 141,392 \\ 94,324,381 \end{array}$ | $\stackrel{-}{04,824,381}$ | $\underset{94,854,381}{-}$ |
| Total Recorded Aspeta. | 11,399,966,729 | 11,615,337,230 | 12,601,367,058 |
| Less: Reserve for losses on realization of aksets. | -546, 584,065 | -540,584,085 | -546,584,065 |
| Net recorded assets. | 10,853,582,664 | 11,068, 958,165 | 12,054,988,998 |
| Net debt. | 15,070, 149, 452 | 15,504,472,544 | 15,543, 447,885 |
|  | 25,923,732,116 | 26,573,425,709 | 27,598, 430, 858 |

## 11.-Statement of Assets and Liabilities of the Government of Canada, as at Mar. 31, 19\%4-6t-concluded

| Item | 1964 | 1965 r | 1968 |
| :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ |
| Labllties |  |  |  |
| Current and Demand Liabitities- |  |  |  |
| Outstanding treasury cheques... | 319,894,410 | 315,077, 233 | 332,859,574 |
|  | 580,996,025 | 367,807,531 | 255,388, 518 |
| Matured debt outstanding ...................... | 26,820,209 | 19, 140,916 | 27,324,686 |
| Interest due and outatanding | 91, 893.489 | 102,034,032 | 110.930. 898 |
| Intereat acerued. | 215,973.372 | 231,173,522 | 254,292,555 |
| Other current lisbilities. | 35,710,909 | 33,367,648 | 37.731,247 |
| Totals, Current and Demand Liabilities. | 1,619,961,434 | 1,432,616, 197 | 1,308,836,094 |
| Deposit and trust accounts. | 196, 454, 123 | 272,311,390 | 426,219,389 |
| Annaity. Insurance and Pension AccountsGovernment apnaities. | 1,284,261,927 | 1,303, 136,883 | 1,317,080,018 |
| Canada Pension Plan Account. |  |  | 189,405,854 |
| Old Age Security Furd...... |  |  | 216,982, 842 |
| Canadian forces superannuation account. . . . . . . . . . . . . . . . . . . . | 1,821,524,901 | 2,028.122,459 | 2.184.209,822 |
| Public service superannuation accoust | 1,856, 407,623 | 2,161, 828,359 | 2,390,363,090 |
| Miscellaneous. | 168,859,360 | 182,753, 152 | 194,071,319 |
| Totals, Ansuity, Insurance and Pension Accounts...... | 5,131,053,811 | 5,675, 840,853 | 6,392,132,945 |
| Undisbursed Balances of Appropristions to Special AccountsColombo Plan Fund. Miscellaneous. | *. | . | $\because$ |
| Totals, Undisbursed Balances of Appropriations to Special Accounts. | 111,601,270 | 95,702,607 | 101,945,175 |
| Delerred credita and suspense accounts. | 124,564,449 | 118.740,283 | 169,510,146 |
| Unmatured Debt-Bonde- |  |  |  |
| Paysble in Canada Payable in London | 16,133,692,000 | 16,461, 809, 150 | 16,588,787,500 |
|  | 376, 405,029 | 378,405,029 | 370,999,629 |
| Treasury Bills and NotesPayable íc Canada.... | 2,230,000,000 | 2,140,000,000 | 2,150,000,000 |
| Totals, Unmatured Debt. | 18,740,097,029 | 18,978,214, 179 | 19,109, 787,129 |
| Totals, Miabilities.. | 25,323,732,114 | 26,578,425,769 | 27,598,430,858 |

Guaranteed Debt.-In addition to the direct debt already dealt with, the Government of Canada has assumed certain contingent liabilities. The major categories of this indirect or contingent debt are the guarantee of insured loans under the National Housing Act, the guaranteed bonds and debentures of the Canadian National Railways and the guarantee of deposits maintained by the chartered banks in the Bank of Canada. The remainder consists chiefly of guarantees of loans made by chartered banks to the Canadian Wheat Board, to farmers and to university students and of guarantees under the Export Credite Insurance Act.

# 12.-Guaranteed Debt of the Government of Canada, as at Mar. 31, 1885 

Source: Public Accourds of Canada

| Item | Amount of Guarantee Authorized | Amount Outatanding in the Hands of the Public as at Mar. 31, $19855^{2}$ |
| :---: | :---: | :---: |
|  | \$ | \$ |
| Rallway Securities Guaranteed as to Prinelpal and Interest- |  |  |
| Canadian National Ry. Co. 3 per cent bonds due 1966.................. | 35,000,000 | 85,000,000 |
| Canadian National Ry. Co. 2f per cent bonds due 1967 | 50,000,000 | 50,000,000 |
| Canadian National Ry. Co. $4 \frac{1}{2}$ per cent bonds due 1967.................. | 72,300,000 | 72,300,000 |
| Canadian Nationa! Ry. Co. 5 per cent bonds due 1968. | 55,800,000 | 85,800,000 |
| Canadian National Ry. Co. 27 per cent bonds due 1969. | 70,000,000 | 70,000,000 |
| Canadian National Ry. Co. $2 \boldsymbol{1}$ per cent bonds due 1971 | 40, 000,000 | 40,000,000 |
| Canadian National Ry. Co. $5 \frac{3}{2}$ per cent bonds due 1971 | 190.561,500 | 100,501,500 |
|  | 200,000,000 | 200,000,000 |
| Cansdian National Ry. Co. 21 per cent bonds due 1975................. | 6,488,486 | 6,486,486 |
| Canadian National Ry. Co. 5 per cent bonds due 1977 | $84,150,000$ | 84,150,000 |
| Canadian National Ry. Co. 4 per cent bonds due 1981................... | 300,000,000 | 300,000,000 |
| Canadian National Ry. Co. $5 \frac{1}{\text { i per cent bonda due } 1985}$ | 99,500,000 | 99.500,000 |
| Canadian National Ry. Co. 5 per cent bonde due 1987 | 164,500,000 | 164,500,000 |
| Other Guarantees- |  |  |
| Deposits maintsined by chartered banks in Bank of Canada. | Unstated | 897,218,288 |
| Loans made by lenders under Part IV of the National Housing Act, 1954, for home extensions and improvements.. | 25,000,000 | 15,863, 475 |
| Insured loans made by approved lenders under the National Housing Act, 1954 | 6,000,000,000 | 4,934,000,0003 |
| Insurance and guarantees issued or approved under Section 21 and 21A of the Export Credits Insurance Act. | 1,000,000,000 | 468,643, 668 |
| Loans made by chartered banks under the Farm Improvement Loans Act. | 76,182,536 | 63,945+589 |
| Loans made by chartered banks under the Veterans Business and Professional Loans Act. | 10,400 | 10,400 |
| Loans made by chartered banks and credit unions under the Canada Student Loans Act. | 40,000,000 | 37,459,073 |
| Loang made by chartered banks and credit unions under the Fisheries Improvement Loans Act. | 2,376,375 | 250,477 |
| Loans made by chartered banks under tbe Small Businesses Loars Act. | 37, 455,472 | 10.582,576 |
| Loans made by chartered banks to the Canadian Wheat Board......... | 414,000,000 | 169,770,000 |

[^339]Table 13 summarizes the national debt position during the period 1957-66 as to interest and amount outatanding. Details of unmatured debt and treasury bills outstanding and
information on new security issues of the Federal Government may be found in the Public Accounts of Canada. They are summarized by standard classification in DBS publication Federal Government Finance, Revenue and Expenditure (Catalogue No. 68-211).

## 13.-Summary of the Public Debt and Interest Payments Thereon, Years Ended Mar. 31, 1957-66

Nore--Comparable figures from 1867 are given in the corresponding table of previous Year Books besinning with the 1942 edition.

|  | Gross Debt | Net Active Assets | Net Debt | Net <br> Debt per Capital | Increase or Decrease of Net Debt during Year | Interest Paid on Debt | Interest Paid per Capita: |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \% | \$ | \$ | \$ | \$ | * | \% |
| 1957. | 18,335,787,515 | 7,328,148,357 | 11,007,651,158 | 662.71 | -272,717,806 | 520,189, 398 | 32.35 |
| 1958... | 18.418,541, 848 | 7,372, 267,958 | 11,046,273,890 | 646.71 | 38,622, 732 | 538,207,260 | 32.46 |
| 1959... | 20,246,773,669 | 8,568,383,809 | 11,678.389,800 | 667.99 | 832,115,970 | 606,615,887 | 35.52 |
| 1960... | 20,986, 367,010 | 8, 897,173,007 | 12,089, 194,003 | 676.51 | 410,804,143 | 735,630,175 | 42.08 |
| 1961... | 21,602,836,950 | 9, 165,721,865 | 12,437, 115, 095 | 681.93 | 347,921,082 | 756,664,228 | 42.34 |
| 1962... | 22,907, 814,464 | 9.679,677,419 | 13,228,137,045 | 712,34 | 791,023,950 | 802,919,207 | 44.02 |
| 1963. | 24,799, 279,690 | 10,879,509, 718 | 13,918,769,972 | 736.65 | 691,632,927 | 881,598,898 | 47.47 |
| 1964... | 25,923,732,116 | 10,853, 582,664 | 15,070, 149,452 | 783.39 | 1, 150,379,480 | 954,543,790 | 50.52 |
| $1965{ }^{\text {\% }}$.. | 26,573,425,709 | 11,088, 958, 165 | 15,504, 472,544 | 792.22 | 434,323, 092 | 1,012,097, 143 | 52.62 |
| 1966.. | 27,598,430,858 | 12,054,982,983 | 15,543,447, 865 | 780.33 | 38,975,321 | 1,077,295,513 | 55.05 |

I Based on the official estimates of population lor June 1 of the year indicated.
2 Based on the official estimates of population for June 1 of the year immediately preceding the one indicated.

## Subsection 3.-Revenue from Taxation

The incidence of Federal Government taxation is dealt with in Section 2. This Subsection includes statistical data on revenue received from individual income tax, corporation tax, estate tax, excise duties and excise taxes; customs receipts constitute a single item in the Public Accounts of Canada and are not included here.

## Individual and Corporation Income Tax

Statistics of income tax collections are gathered at the time the payments are made and are therefore up to date. Over 85 p.c. of individual taxpayers are wage or salary earners who have almost the whole of their tax liability deducted at the source by their employers. All other taxpayers are required to pay most of their estimated tax during the taxation year. Thus, the greater part of the tax is collected during the same year in which the related income is earned and only a limited residue remains to be collected when the returns are filed. The collections for a given fiscal year include tax deductions and instalments for twelve months, embracing portions of two taxation years, and a mixture of year-end payments for the first of these years and for the preceding year; they cannot therefore be closely related to the statistics for a given taxation year. As little information about a taxpayer is received when the payment is made and as a single cheque from one employer may frequently cover the tax payment of hundreds of employees, the payments cannot be statistically related to taxpayers by occupation or income. Descriptive classifications of taxpayers are available only from tax returns but collection statistics, if interpreted with the current tax structure and the above factors in mind, indicate the trend of income in advance of the final compilation of statistics.

The statistics given in Table 14 pertain to tax collections by the Taxation Division of the Department of National Revenue. The collections are for fiscal years ended Mar. 31.

## 14.-Taxes Collected by the Taxation Division of the Department of National Revenue, Years Ended Mar. 31, 1957-66

Nore.-Comparable figures from 1917 are given in the corresponding table of previous Year Books beginning with the 1947 edition.

| Year Ended Mar. 31- | Income Tax ${ }^{1}$ |  |  | Estate Tax | Total Collections |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Individual ${ }^{2}$ | Corporation | Total |  |  |
|  | \$ | \$ | 8 | \$ | \$ |
| 1957. | 1,601,897,580 | 1,335,636,914 | 2,937,534,494 | 79,709,197 | 3,017,243,691 |
| 1958. | 1,699,123,470 | 1,295,470,725 | 2,994,594,195 | 71,607,758 | $3,066,201,953$ |
| 1959. | 1,561,062,606 | 1,075, 878,164 | 2,636,940,770 | 72,535,140 | 2,709,475,910 |
| 1960. | 1,825,547,063 | 1,234,215,702 | 3,059,762,765 | $88,430,705$ | $3,148,193,470$ |
| 1961. | 2,028, 733, 394 | 1,380,128,380 | 3,408,861,774 | 84,879,372 | 3,493,741,146 |
| 1962. | 2,200,573,190 | 1,303, 502,634 | 3,504, 075,824 | 84, 579,382 | 3,588,655,206 |
| 19633. | 2,399,882, 273 | 1,362,655,419 | 3,762,537,692 | 87, 143,312 | $3,849,681,004$ |
| 19643 | 2,579,083, 811 | 1,472,175, 333 | 4,051, 259,144 | 90,671,283 | 4,141, 930, 427 |
|  | 3,047,590,003 | 1,804,507,172 | 4,852, ${ }^{\text {5, }}$, $227,74,76$ | 88,625,641 | 4,940,722,817 |
| $1966{ }^{3}$ | 3,336,657,371 | 1,891,085,343 | 5,227,742,714 | 108,352,377 | 5,336,095,091 |

${ }^{1}$ Includes old age security tax. ${ }^{2}$ Includes "non-resident" taxes.
${ }^{2}$ Includes amounts of provincial income tax collected by the Taxation Division.

Individual Income Tax Statistics.-Individual income tax statistics are presented in Tables $\mathbf{1 5}$ to $\mathbf{1 7}$ on a calendar-year basis and are compiled from a sample of all returns received. Taxpayers and amounts of income and tax are shown for selected cities and by occupation and income classes.
15.-Number of Taxpayers and Amounts of Income and Tax, by Selected Cities, 1963 and 1964

| City and Province | 1963 |  |  | 1964 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Taxpayers | Total Income Assessed | Tax Payable ${ }^{1}$ | Taxpayers | Total Income Assessed | Tax Payable ${ }^{1}$ |
|  | No. | \$'000 | \$ 000 | No. | \$'000 | \$'000 |
| Brantford, Ont. | 22,837 | 99,308 | 10,281 | 23,087 | 108.624 | 12,338 |
| Calgary, Alta... | 95,957 | 458,604 | 50,529 | 104,001 | 524,035 | 61,143 |
| Edmonton, Al | 118,479 | 545,783 | 57,040 | 124,493 | 585,811 | 64,969 |
| Fort Willism and Port Arthur, Ont.. | 32,864 | 146,735 | 14,120 | 34,025 | 160,238 | 16,737 |
| Halifax, N.S......................... | 37,436 | 161,302 | 16,132 | 39,704 | 183,395 | 20.560 |
| Hamilton, Ont | 132,688 | 652,172 | 71, 173 | 141,826 | 725,443 | 86,301 |
| Hull, Que. | 26,859 | 115,739 | 8,842 | 29,612 | 131,883 | 10,786 |
| Kitchener and Waterloo, Ont. | 43,608 | 198,072 | 21,297 | 45,319 | 217,820 | 25,436 |
| London, Ont. | 65,911 | 299,149 | 32,120 | 69,023 | 328,933 | 38,225 |
| Montreal, Que....... | 623,880 | 2,971,050 | 283,931 | 682, 101 | 3,378,775 | 346,874 20.252 |
| New Westminster, B.C | 34,391 | 160,728 | 15,456 | 38,406 | 190.087 | 20.252 9.669 |
| Niagara Falls, Ont.. | 17,286 | 77,288 | 7,359 | 18,993 | $\begin{array}{r}90,878 \\ 154 \\ \hline\end{array}$ | 9,669 19.511 |
| Oshawa, Ont.. | 27, 293 | 143,579 | 17,296 | 29,537 | 154, 820 | 19,511 |
| Ottawa, Ont | 117,329 | ${ }_{393}^{582,356}$ | 66,936 33 | 124,172 | 638,764 <br> 453 | 71, 40,685 |
| Quebec, Que. | 87,163 42,636 | 393,856 194,320 | 33,618 21 | 97,134 | 453,796 215,596 | 20,628 |
| St. Catharines. | 34,955 | 169,092 | 17,560 | 35,863 | 185,926 | 21,670 |
| St. John's, Nfld | 23,816 | 102,889 | 10,204 | 24,226 | 106,726 | 11,654 |
| Saint John, N.B. | 24,280 | 99,128 | 8,761 | 25,749 | 111,819 | 10,796 |
| Saskatoon, Sask | 32,177 | 141,910 | 14,575 | 34,472 | 158,364 | 18,123 |
| Sherbrooke, Que | 21,050 | 88,678 | 6,877 | 22.706 | 99,826 | 8,619 |
| Sudbury and Copper Cliff, On | 31,471 | 150,128 | 14,454 | 33,867 23,264 | 166,870 | 17, 8,247 |
| Sydney and Glace Bay, N.S......... Toronto, Ont... | 21,698 720,714 | 93,342 $3,500,778$ | 7,161 425,412 | 23,264 762,741 | 99,282 $3,893,189$ | 509,961 |
| Vancouver (incl. West Van.), B.C.... | 234,042 | 1,148,052 | 131, 282 | 250,820 | 1,294,699 | 163,207 |
| Victoria, B.C.............. | 49,301 | 229,759 | 23,480 | 51,979 | 247,245 | 26,765 |
| Windsor, Ont. | 54,194 | 271.000 | 28,630 | 61,075 | 322,374 | 37, 375 |
| Winnipeg, Man | 165,584 | 736.369 | 80.032 | 173,070 | 795,104 9.603 | 91,564 916.585 |
| Other localities | 1,987,475 | 8.490.441 | 746.907 | 2,154,810 | 9,603,631 | 916,585 |
| Totals | 4,927,373 | 22,421,607 | 2,243,012 | 5,301,219 | 25,173,953 | 2,719,201 |

[^340]
## 16.-Number of Taxpayers and Amounts of Income and Tax, by Occupational Class, 1963 and 1964

| Occupational Class | 1983 |  |  | 1984 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Taxpayers | Total <br> Income <br> Assessed | Tax <br> Payable ${ }^{1}$ | Taxpayera | Total Income Assessed | Tax <br> Payable ${ }^{1}$ |
|  | No. | \$'000 | \$ 000 | No. | \$ 000 | \$ 000 |
| Farmers............................. | 92,026 | 421,682 | 38,388 | 106,614 | 526,977 | 52,301 |
| Fishermen........................... | 4,177 | 20,823 | 2,130 | 5,755 | 28,893 | 3,025 |
| Profeesionsls- <br> Accountanta | 4.580 | 50,462 | 9.293 | 4.783 | 62,411 | 12,686 |
| Medical doctors................. | 15,019 | 291.869 | 71,816 | 15,182 | 326.019 | 83,429 |
| Dentista.......................... | 5,092 | 69,653 | 13.956 | 5.102 | 76,067 | 16,105 |
| Lawyers and notsries........... | 7,728 | 125,832 | 30.150 | 8,328 | 143,921 | 35.183 |
| Engineers and arcbitects........ | 2,594 | 38,880 | 9,001 | 2.621 | 44,035 | 10.648 |
| Employees. . . . . . . . . . . . . . . . . . . | 4,295,491 | 18,687,839 | 1,750,407 | 4,606,207 | 20,882,428 | 2.123,193 |
| Salesmen. | 61,311 | 322,740 | 38,057 | 59,728 | 401, 484 | 51,757 |
| Business proprietors, ................ | 214,007 | 1,167,887 | 132,553 | 224,158 | 1,278,345 | 153,320 |
| Investore. | 147, 124 | 892,669 | 118.523 | 160,452 | 1,032,838 | 146,264 |
| Pensioners, | 61,912 | 200.188 | 12,245 | 78,843 | 254,274 | 16,226 |
| All others............................ | 26.002 | 131,133 | 17,012 | 23,346 | 116,201 | 15,064 |
| Totals. . . . . . . . . . . . . . . | 4,927,373 | 22,421,607 | 2,243,042 | 5,301,215 | 25,173,953 | 2,713,201 |

- Ineludes old age security tar.
17.-Individual Income Tax Statistics, by Income Class, 1963 and 1964

| Tazable Income | Taspayers |  | Total Income Aspessed |  | $\underset{\text { Payable }}{\text { Tax }}$ |  | $\begin{gathered} \text { Average } \\ \text { TaI }^{\top} \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1068 | 1964 | 1963 | 1964 | 1963 | 1964 | 1963 | 1964 |
|  | No. | No. | \% ${ }^{\prime} 000$ | \$000 | \$ 000 | \$000 | \$ | 8 |
| Under \$1,000.. | 36,785 | 28,763 | 17,306 | 14.779 | 2,486 | 1,744 | 68 | 61 |
| \$ 1,000 and under \$ $2,000 \ldots$ | 637,433 | 644,711 | 995,920 | 1,007,385 | 36,468 | 39,155 | 57 | 61 |
| \$2,000 " " $\$ 3,000 \ldots$ | 896,573 | 909,264 | 2,254,275 | 2,285,332 | 138,432 | 149,531 | 152 | 164 |
| \$3,000 " " $\$ 5,000$ | 1,845,210 | 1,913,838 | 7,321,585 | 7,612,360 | 529,687 | 606,490 | 287 | 317 |
| \$ 5,000 a ${ }^{\text {c }}$ \% $\$ 10,000$ | 1,306,679 | 1,562,635 | 8,418,427 | 10,151,595 | 835,273 | 1,064,008 | 639 | 681 |
| \$10,000 " " $525,000$. | 182,082 | 214,184 | 2,500,980 | 2,960,463 | 420,551 | 504,031 | 2,310 | 2,353 |
| \$25,000 a " $\$ 50,000$ | 18,755 | 22,948 | 618,985 | 756,835 | 172,212 | 211,463 | 9,182 | 9,216 |
| \$50,000 or over. | 3,856 | 4,878 | 298,179 | 385,204 | 109,935 | 142,779 | 28,510 | 29,270 |
| Totals. | 4,977,373 | 5,301,215 | 22,421,687 | 25,173,953 | 2,243,043 | 2,719,301 | 455 | 513 |

[^341]
## 18.-Summary Statistics for Corporations Reporting a Profit, Taxation Years 1963 and 1364

| Item | 1963 |  |  | 1964 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { Corpora- } \\ & \text { tions } \\ & \text { Reporting } \end{aligned}$ | Current Year Profit | Total Tax Deciared ${ }^{1}$ | Corporations Reporting | Current Year Profit, | Total Tax Declared ${ }^{4}$ |
|  | No. | \$ 000.000 | \% 000,000 | No. | \$'000,000 | \$ 000,000 |
| Active tamable corporations-excluding co-operatives and Crown corporations. | 80,516 | 4,208.8 | 1,450.9 | 87,209 | 4,593.3 | 1,621.3 |
| Inactive corporations. . . . . . . . . . . . | 5,078 | 2.2 | 0.2 | 5,608 | 1.5 | 0.1 |
| Co-operativea...................... . | 1,715 | 8.4 | 1.8 | 1,998 | 10.6 | 2.2 |
| Crown corporations. | 6 | 32.6 | 18.2 | 6 | 28.5 | 14,5 |
| Totals, Taxable Corporations. | 87,310 | 4,252.0 | 1,469.1 | 94,821 | 4,833.9 | 1,688.0 |
| Personal corporationa. .............. | 3,073 | 43.4 | - | 3.397 | 45.3 | - |
| Otber exempt corporations. ......... | 4,032 | 53.4 | - | 4,224 | 88.6 | - |
| Totals, Tarable and Exempt..... | 91,415 | 4,348.8 | 1,469.1 | 162,442 | 4,737.9 | 1,488.0 |

- Includes old age security tax.
19.-Distribution of Active Taxable Corporations Reporting a Proft, by Industry and Province, Taration Years 1963 and 1564

| Industrial Group and Province | 1963 |  |  | 1984 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Corporations Reporting | Current Year Profit | Total Tax Declared ${ }^{1}$ | Corporations Reporting | Curreat Yем Profit | Total <br> TaI Declared |
|  | No. | \$'000,000 | \$ 000,000 | No. | \$ 000,000 | \% ${ }^{\prime} 000,000$ |
| Industrial Group |  |  |  |  |  |  |
| Agriculture, fisbing and forestry..... | 1,695 | 26.6 | 6.4 | 2,079 | 40.1 | 10.7 |
| Mining, quarrying and oil........... | ${ }^{852}$ | 236.8 | 99.9 | 732 | 265.6 | 111.1 |
| Manufacturing. . . . . . . . . . . . . . . . . . . | 14,088 | 2,040.8 | 742.8 | 14,273 | 2,095.9 | 795.8 |
| Construction.,...................... | 8,297 | 135.0 | 29.2 | 9,364 | 150.9 | 29.2 |
| Transportation, storage and other utilities. | 3,386 | 458.3 | 175.8 | 3,894 | 580.6 | 212.6 13.8 |
| Wholegale trade | 12,097 | 831.1 | 87.2 | 12,600 | 383.4 | 113.8 |
| Retail trade...................... | 14,901 | 285.2 | 89.7 | 15,593 18,186 | 325.2 655.8 | 105.0 205.4 |
| Finance, insurance and real estate... | 16,324 9,685 | 563.0 132.1 | 177.8 31.9 | 18,160 10,502 | 665.6 155.9 | 200.4 |
| Totals . . . . . . . . . . . . . . .Province | 80,516 | 4,208,8 | 1,459.9 | 87,209 | 4,593.3 | 1,481.3 |
|  |  |  |  |  |  |  |
| Newtoundland..................... | 922 |  |  | 847 | 40.1 | 18.9 |
| Prince Edward Island............... | - 374 | ${ }^{6.4}$ | 1.8 | ${ }^{311}$ | 9.2 44 | 2.3 15.2 |
| Nova Scotia........................ | 2,078 1 1,234 | 48.0 38.1 | 16.5 13.1 | 2,200 1.775 | 44.4 35.3 | 10.8 |
| New Brunswick. . . . . . . . . . . . . . . . | 1.234 20.350 | 1,238.5 | 13.1 414.9 | 1,775 | 35.3 $1,410.8$ | 10.8 |
| Ontario. | 29.218 | 2,048.2 | 697.4 | 32,267 | 2,160.3 | 754.8 |
| Manitoba | 3,927 | 129.1 | 49.0 | 4, 135 | 190.4 | 73.8 |
| Saskatchewan | 2,365 | 44.0 | 14.2 | 2,759 | 47.9 | 15.0 |
| Alberta. | 8,060 | 233.1 | 82.9 | $\begin{array}{r}8,589 \\ \hline 13,650\end{array}$ | 225.8 | 78.9 164.5 |
| British Columbia.................... | 12.088 | 390.2 | 145.5 | 13.650 | 429.1 | 164.8 |

${ }^{1}$ Includes old age security tax.

## 20.-Corporations Reporting a Profit, by Income Class and Size of Total Assets, Taxation Years 1963 and 1964

Note.-Figures are for corporations described as "fully tabulated" which means corporations for which sufficient information has been received for complete analyses.

| Income Class and Size of Assets |
| :---: | :---: | ---: | ---: | ---: | ---: |

## Succession Duties and Estate Taxes

A history of succession duties is given in the 1956 Year Book, pp. 1064-1068. From Jan. 1, 1947 to Mar. 31, 1963, only Ontario and Quebec among the provinces levied succession duties, the other provinces having leased this field to the Federal Government under the terms of the 1947, 1952 and 1957 tax agreements (see p. 1020). However, British Columbia re-entered the field, effective for all deaths occurring on or after Apr. 1, 1963. The incidence of the estate tax is discussed at pp. 1026-1027.

Federal revenue from succession duties and estate taxes in the year ended Mar. 31, 1965 amounted to $\$ 88,625,641$. In the same year, Quebec's revenue from succession duties amounted to $\$ 35,426,000$ and Ontario's revenue from succession duties to $\$ 48,682,000$.

## Excise Taxes

Excise taxes collected by the Excise Division of the Department of National Revenue are given for the years ended Mar. 31, 1964 to 1966 in Table 21.
21.-Excise Taxes Collected, by Commodity, Years Ended Mar. 31, 1964-66

| Commodity | 1964 | 1965 | 1966 |
| :---: | :---: | :---: | :---: |
|  | 8 | \$ | 8 |
| Sales tax ${ }^{1.2}$. | 946, 054,797 | 1,204,609,934 | 1,395,128,921 |
| Other Excise Taxes- |  |  |  |
| Automobiles. | 194 | 239 |  |
| Cigarettes, tobacco and cigars | 226, 938,710 | 218,343,946 | 238,080,357 |
| Electric power export............ | 126,937 $6,353,314$ | 6,864,180 | 7,935,585 |
| Matches and lighters. | $1,261,797$ | 1,181,009 | 1.228,556 |
| Television sets, radios, tubes and phonographs | 22,009,701 | 23,521, 713 | 26.960,462 |
| Toilet preparations... | 11, 125, 893 | 12,790.734 | 14,113,979 |
| Sundry commoditi | 3,814,127 | 4,092, 094 | 4,401,603 |
| Interest and penalties | 1,301,810 | 1, $1,208,554$ | $2,185,240$ $1,620.049$ |
| Less refunds and drawbacks. | -331,330 | -346,938 | -347,733 |
| Totals | 1,219,470,241 | 1,473,692,018 | 1,691,307,019 |

[^342]${ }^{2}$ Net after deduction of refunds and drawbacks.

## Excise Duties

Gross excise duties collected are given in the following statement for the years ended Mar. 31, 1964 and 1965. The totals do not agree with net excise duties as shown in Table 9 because refunds and drawbacks are included. A drawback of 99 p.c. of the duty may be granted when domestic spirits, testing not less than 50 p.c. over proof, are delivered in limited quantities for medicinal or research purposes to universities, scientific or research laboratories, public hospitals, or health institutions in receipt of federal and provincial government aid.

| Item | 1984 | 1965 |
| :---: | :---: | :---: |
|  | \$ | \$ |
| Spirits... | 129,399,249 | 134,716,066 |
| Beer or malt liquor.... | 102,914,879 | 105,386,115 |
| Tobacco and cigarettes. | 184, 804,918 | 176, 129,508 |
| Cigars.......... | 836,018 | 1,038,218 |
| Licences. | 35,770 | 32.419 |
| Totals. | 397,990,334 | 417,302,326 |

## Section 4.-Federal-Provincial Conditional Grants and Shared-Cost Programs*

During the past decade there has been a rapid increase in federal expenditures on joint federal-provincial programs. These programs take three forms: (1) the Federal Government contributes financial assistance to a program administered by a province; (2) the federal and provincial governments each assume the sole responsibility for the construction, administration and financing of separate aspects of a joint project; or (3) the province contributes financially to a joint program administered by the Federal Government.

The first category of joint programs is by far the most common and such programs are commonly called conditional grant programs. They are characterized by the Federal Government agreeing to make money available to a province on certain conditions, such conditions always specifying the field, service or project to which the money must be applied. In addition, the province may be required to make a financial contribution to the program, to provide certain facilities, and to maintain the program at certain specified standards. The various programs in the welfare field were good examples of conditional grant programs. Under the old age assistance program, the Federal Government undertook to share with a province the cost of assistance to persons who had attained the age of 65 years to the extent of 50 p.e. of a monthly assistance allowance of $\$ 75$; the recipient, besides being above a certain age, must have been a resident of Canada for 10 years and his income, including the assistance, must not be in excess of $\$ 1,260$ a year if unmarried, $\$ 2,220$ if married, and $\$ 2,580$ if married to a blind spouse. The provinces are entrusted with the administration of the program and are required to bear the administrative costs as well as one half of the monthly allowance.

Although the old age assistance program, with its specification of the standards for eligibility, the level of the allowance and the federal share of the joint costs, is characteristic of conditional grant programs, there are some in which the conditions are nominal. For example, under the employment assistance program the Federal Government undertook to share one half of the cost of relief paid to social assistance recipients, the scale and conditions of the assistance to be determined by the provinces. In general, it may be said that the old age assistance program conformed to the traditional pattern of conditional

[^343]grants, whereas the unemployment assistance program marked a newer approach in which flexibility and adaptability to local circumstances was allowed to modify insistence on a national uniform standard.

The federal transfers to the provinces in respect of the conditional grant programs increased from $\$ 75,000,000$ in the year ended Mar. 31, 1954, to an estimated $\$ 1,109,107,000$ in 1965-66. The increase was attributable largely to the introduction of the unemployment assistance program in 1955 and the hospital insurance and diagnostic services program in 1958, to the increase in the level of old age assistance, disabled persons' and blind persons' allowances, and to the enlargement and reorientation of the vocational and technical training program (see pp. 347-348). In 1965-66, federal contributions to the programs in respect of the unemployment assistance and the hospital insurance and diagnostic services programs were estimated at $\$ 123,983,000$ and $\$ 492,061,000$, respectively.

Joint programs in the second category-those in which the federal and provincial governments accept sole responsibility for portions of a total project-are not numerous and are generally of a public works type. The irrigation projects carried out jointly by the Prairie Farm Rehabilitation Administration and the Province of Alberta on the St. Mary's and Bow Rivers in southern Alberta are of this nature, as is the bridge recently built between Ottawa in Ontario and Hull in Quebec. In the St. Mary's irrigation project, the Federal Government has undertaken the responsibility for the construction of all main reservoirs, large dams and connecting works, and Alberta has assumed responsibility for the construction of the distribution system and the development and colonization of the new irrigable areas.

Joint programs in the third category are also few in number and the sums of money involved are seldom large. The Fraser River Board and the South Saskatchewan River Dam are two examples. The Fraser River Board was established by Canada and British Columbia in 1955 to investigate flood control and hydro-electric power generation on the Fraser River. Canada undertook to pay the costs of the Board in the first instance with British Columbia subsequently reimbursing Canada for half of the expenditures of the Board. In the case of the South Saskatchewan River project, Saskatchewan is to reimburse Csnada for 25 p.c. (up to a maximum of $\$ 25,000,000$ ) of the federal expenditure on the dam and reservoir. In the year ended Mar. 31, 1965, British Columbia's share of the joint expenditures on the Fraser River Board amounted to $\$ 7,741$, and Saskatchewan's share of the expenditures on the South Saskatchewan River project was $\$ 4,288,543$.

The increasing number and extent of conditional grant and shared cost programs has occasioned some provincial criticisms and misgivings. It has been argued that the preponderant occupancy of the direct tax field in the postwar years by the Federal Government encouraged the growth of such programs as the provinces were denied the revenues that would have enabled them to provide equivalent programs themselves. At the 1964 Federal-Provincial Conference, the Province of Quebec proposed that a province be given the option to assume full administrative and financial responsibility for certain joint programs on the Federal Government making available to that province the necessary additional tax room. The "contracting-out" proposal was referred to a federal-provincial committee of officials for consideration. As a consequence of their consideration, the Prime Minister of Canada, in a letter to the provincial Premiers dated Aug. 15, 1964, proposed a temporary measure permitting a province to contract out of certain programs for an interim period pending the development of more permanent arrangements. Parliament approved the necessary legislation-the Established Programs (Interim Arrangements) Act-in April 1965. Under the Act the Government of Canada was authorized to enter into agreements with any province that wished to contract out of certain conditional grant programs. The nature and number of programs were itemized in the schedules to the Act.

Schedule I listed the major conditional grant programs of a continuing nature which a province might contract out of, and Schedule II listed smalier and more transient programs. The Schedule I programs were: (1) hospital insurance; (2) old age assistance, blind persons' allowances, disabled persons' allowances, and the welfare portion of unemployment assistance; (3) the technical and vocational training programs for youths who were not yet members of the labour force; and (4) the health grant program, except those elements that involved research and demonstration. The Schedule II programs: (1) agriculturad lime assistance; (2) the forestry programs; (3) hospital construction grants; (4) campgrounds and picnic areas; and (5) the roads to resources program.

If a province wished to contract out of a Schedule I program, it had to enter into a supplemental agreement in which it undertook to assume full responsibility for the administration and financing of the program. The Federal Government undertook to ensure that the province received revenue equivalent to the fiscal burden it assumed. The Federal Government undertook to ( $a$ ) abate by a specified percentage the federal individual income tax on the income of residents of the province; (b) pay an associated equalization; and (c) make an operating cost adjustment. The operating cost adjustment payment or recovery was to ensure that a province did not suffer or benefit financially through assuming the financing of the federal share of the former joint program. Because of their smaller size and lack of continuity, the compensation associated with contracting-out of a Schedule II program did not provide for federal tax abatement or associated equalization payments. The compensation for these programs was to be paid directly to the province by the federal Minister of Finance.

The freedom of a province to vary the nature and condition of a program which it has contracted out of differed between the Schedule I and Schedule II programs. Under the Act, a supplemental agreement with respect to a Schedule I program could vary the conditions of the original agreement only as to the manner in which Canada would contribute to the program and the manner in which accounts were submitted. A supplemental agreement for a Schedule II program might require the program to be continued as in the original authority or it might allow a province to substitute a provincial program whose objectives were substantially similar.

The Established Programs (Interim Arrangements) Act was designed to provide for an interim period during which a province might assume greater administrative and financial responsibility for the enumerated programs and during which time more permanent arrangements governing joint programs might be devised. The length of the interim pariod was set out in the Act for each program and varied from Mar. 31, 1967 to Dec. 31, 1970. The tax abatement associated with Schedule I programs was also set out in the Act and varied from 1 p.c. for the health grant program to 14 p.c. for hospital insurance.

The Province of Quebec alone availed itself of the above legislation and entered into agreements contracting out of all Schedule I programs and one Schedule II program, the forestry program. At the federal-provincial meetings in September and October 1966, the Federal Government proposed a slightly revised contracting-out arrangement to the provinces who had not taken advantage of the Established Programs (Interim Arrangements) Act. The Federal Government proposed to abate, for the period 1967-70, 17 p.c. of the personal income tax in those provinces that would take over the financial responsibility for the hospital insurance, welfare (i.e., Canada Assistance Plan) and health grant programs. To ensure fiscal equity, equalization and operating cost adjustment payments were to be associated with the abatement. As the technical and vocational program was being discontinued in its existing form, the offer did not apply to that program. None of the nine provinces to whom the offer applies has indicated its intention to accept.

| Department and Projeot | Year Establiahed | Basia of Provincial Apportionment of Federal Funds | Provinces Participating | Provincial Share | Maximum Limitation on Grant ${ }^{3}$ | $\begin{gathered} \text { Federal } \\ \text { Contribation } \\ 1984-65^{4} \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Arriculture- |  |  |  | p.c. |  | \$000 |
| Premiums on purebred sires, etc.................. | 1913 | Extent of provincial programs.. | 10 | . | $\checkmark$ | 55 |
| Freight essiatance on livestock shipments to Royal Winter Fair | 1946 | Ertent of provincial progrsms. | 9 (Ont.) | 25 |  |  |
| 4-H Club Activities | 1900 | Extent of provincial programs. | ${ }_{10}$ (Ont.) | 50 | 0 | 135 |
| Potato Warehouse Construction. | 1947 | Estimated cost........... | P.E.I., Man-t |  |  |  |
| Asricultural Lime Asaistance. | 1843 | Extent of provincial programs.. | Sask., B.C. <br> 7 (Prairie) | 374 40 | $\stackrel{0}{0}$ | 1,584 |
| Land Protection and Reclamation- |  |  |  |  |  |  |
| Riding and Duck Mountains...................... | 1949 1950 | Estimated cost.. | Man. | 50 | $\underset{F}{F}$ | ${ }^{8} 8$ |
| Bow River Irrigation................................ | 1950 | Eftimated cost. | Alta. | - | $\underset{\mathrm{F}}{\mathrm{F}}$ | 1,359 |
| Assiniboine River- |  |  |  |  |  |  |
| South Saskatchewan Dam (dama and reeervoir) | 1858 | Estimated cost. | Man. | 50 25 | $\stackrel{O}{P}$ | $\begin{array}{r} 701 \\ 14,238 \end{array}$ |
| Asgistance in Fodder Transportation... | ad hoc | Estimated cost | N.S., Man, |  |  |  |
| Crop loss compens |  |  | Sask., B.C. | ${ }_{50} 8$ | ${ }^{\circ}$ | 03 |
| Crop Ingurance...... | 1961 | Extent of provicial programs. | P.E.I., Man., | 0-50 of |  |  |
| Indemnity for Loeses due to Disease- |  |  |  | sdmain. costs | O | 487 |
| Rabies...................... | 1959 | Incidence of diserae. | Que., Ont. | 60 | 0 | 19 |
| Barberry eradication................................. | 1984 | Extent of provincial programe | Que., Ont. | 50 | 0 | 92 |
| Cttixenship and Immigration- |  |  |  |  |  |  |
| Hospitalization and welfare of indigent immigrants. | 1947 | Estimated cost. | 9 (N.B.) | 50 | 0 | 31 |
| Instruction for immigranta. . . . . . . . . . . . . . . . . . . . . | 1964 |  | 9 (Que.) | 50 | 0 | 260 |
| Fur conservation..................................... | 1939 | Extent of provincial programs........ | Ont., Man., Sask., Alta. | 40-50 | F | 187 |
| Roads on and to Indian Reserves- |  |  |  |  |  | 187 |
| Saskatchewan Region <br> Sixpmathena Region | ad hoc ad hoc | Eatimated cost. | Sask. | 50 $50-80$ | $\bigcirc$ | 108,536 |
| Non-reserve Schools for Indians-................* |  |  |  |  |  | 2,416,319 |
| Capital contribution...... | ad hoe | Estimated cost. | various school distriets | ratio white to Indian |  |  |
| Ingtructional contribution. | 1948 | Estimated tuition costa. | various scbool | children | 0 |  |
|  |  |  | districts | - | O | 5,200 |
| Economic Developraent... | 1964 | Estimated cost. | Ont., Mant., Sask. | - |  | 167 |
| Weliare services to Indians. | 1960 | Specified in each agreement. | Ont., Man., Alta. | 0-50 | varies | 125 |


| Department and Project | Year Established | Basis of Provincial Apportionment of Federal Funds | Provinces Participating' | $\underset{\substack{\text { Provincial } \\ \text { Share }}}{\substack{\text { an }}}$ | Marimum Limitation on Grant ${ }^{3}$ | $\begin{aligned} & \text { Federal } \\ & \text { Contribation } \\ & 1964-654 \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | p.c. |  | \$ 000 |
| Emergeney Mexsures................................ | 1952 | Population............................. | 10 | 25-507 | F | 4,927 |
| Tisheries- | 1942 |  |  |  |  |  |
| Construction subsidy-fishing vessels. . . . . . . . . . Community Gishing stagen ................. | 1959 1959 | Extent of provincial programs........... | Atlantic, Nfld. Que. | $\square$ | 0 | 890 489 |
| Induatrial development................................ |  | Extent of provincial programs............ | Atlantio | 50 | $\bigcirc$ |  |
| Forestry- |  |  |  |  |  |  |
| Foreat inventory. | 1951 |  | 7 (Nfld., P.E.I., |  |  |  |
| Reforeatation...................................... | 1951 | Flat grant to P.E.I.: other provinces | 8 (N.B., Que.) | 80 75 | $\frac{\mathrm{F}}{\mathrm{F}}$ | ${ }_{703}^{931}$ |
| Forest Fire Protection............................... | 1957 | ratio of their productive forest lands | $\left\{\begin{array}{l}10\end{array}\right.$ | 50 | ${ }_{5}$ | 3,379 |
| Forest Asceeas Roads.............................. | 1958 1962 | to the total. | 7 ( Nfld ., Alta., | 50 | F | 2,779 |
| Forest Stand Improvement (Cape Breton) |  |  | $\mathrm{B}_{\mathrm{S}} \mathrm{C}$ ) | 50 | $\underset{F}{F}$ | 118 |
| Spruce Brdworm Eradication.................... | 1953 | Extent of Unemployment.............. | N.B. | 334 | $\stackrel{F}{F}$ | 479 |
| Agricultural and Rural Development (Act) | 1962 | Flat grant-ratio of net value of acricultural production, number of sub. marginal farms and rural population to the national totals. | 10 | 331-50 | F | - |
| Labeur- |  |  |  |  |  |  |
| Agricultural Manpower ........................... | 1941 | Specifed in Agreement. ................ | 9 (Nfld.) | 60 | F | 100 |
| Rehabilitation of Disabled Pergons.................. | 1953 | Ertent of provincial programs........... | 9 (Que.) | 50 | 0 | 642 |
| Technical and Vocational Training- | 1050 | Flat grant and population (16-19 age |  |  |  |  |
| Technician Training................ | 1960 | Extent of provincial programs............. | 9 (P.E.I.) | 30 | $\bigcirc$ | 10,234 |
| Trade and Other Occupational Trasing............ | 1960 | Ertent of provincial programs............ | (10) | 50 | $\bigcirc$ | 14,290 |
| Training in Co-operation with Ludustry............ | 1946 | Ertent of provincisl programs........... | $7 \text { (NAd. P.E.I., }$ | 25 |  | 329 |
|  | 1948 |  |  | 10-50 | 0 | 13,500. |
| Training of the Dirabled. ., , . . . . . . . . . . . . . . | 1950 | Extent of provineisl programs............. | 9 (P.E.I.) | 50 | 0 | 855 |
| Training of Tecbnical and Vocational Teachers.. | 1960 | Extent of provincial programe........... |  | 50 | O | 605 |
| Training for Federal Departmente and Agencies... | 1942 | Entimated cost.......................... | varies | ${ }^{0-25}$ | $\because \quad \mathrm{O}$ | 62 |
| Technical and Vocational Correspondence Courneal | 1950 | Specined in Agreement.................. |  | ${ }_{50}$ | $\stackrel{\mathrm{O}}{0}$ | 288 17 |


| Capital Conkribution................................ | 1045 |
| :---: | :---: |
| Apprenticeship Training. | 1944 |
| Municipal Winter Works. | 1958 |
| Nathonal Health and Felfares |  |
| National Health Grants- 1048 |  |
| Hospital Conatruction... | 1948 |
| Protessional Training. | 1948 |
| Mental Health. | 1948 |
| Tuberculosis Control | 1848 |
| Public Health Research | 1948 |
| Cancer Contral. | 1948 |
| General Public Health. | 1948 |
| Child and Maternal Healt | 1953 |
| Medical Rehabilitation and Crippled Children... Hoopital Insurtace. | $\begin{gathered} 1953-48 \\ 1958 \end{gathered}$ |
| Old Age Agsistance | 1952 |
| Blind Persons' Allowances. | 1937 |
| Disabled Persons Allownnces. | 1954 |
| Unemployment Assistance. | 1955 |
| Fritnese and Amateur Sport... | 1962 |
| Disability Advisory Services......................... | 1954 |
| Blind Pensionest-trestment. . . . . . . . . . . . . . . . . . . . . | 1848 |
| National Welfare Granta- <br> -weliare research. <br> -general welfare and professional training ......... | 1962 |
| National Research CouncilTechnical Information Services | 1052 |
| Northern Afinirs and National Besourtes- |  |
| Water Conservation..............,............. . . . . . . | 1938 |
| Nelson River Study . . . . . . . + . . . . . . . . . . . . . . . . . | 1963 |
| Lake of the Woods Control Board........ . . . . . . . . . | 1921 |
| Fraser River Board. | 1949 |
| Greater Winnipeg Floodway | 1962 |
| Roads to Resources........... . . . . . . . . . . . . . . . . . . . . | 1958 |
| Campgrounds-Picnic Areas | 1959 |


| Extent of provincial programs.......... Extent of provincial programa,......... Extent of approved municipal programs. | 8(P.E.I. 10 | $\left\{\begin{array}{c} 25 \text { to Mar. } 31, \\ 1970 \text { and } 50 \\ \text { thereafter } \\ 60 \\ 6 \end{array}\right.$ | F <br> O | $\begin{aligned} & 52,728 \\ & 42,703 \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: |
| Estimated construction... | 10 | 50 | F | 21,469 |
| Flat grant and population, | 10 | - |  | 1,929 |
| Flat grant and population. | 10 | * | $\stackrel{F}{F}$ | 8,635 |
| Based on research needs... | 10 | , | F | ${ }_{1} 1,641$ |
| Flat grant and population. | 10 | 50 | F | 2.547 |
| Flat grant and population... | 10 | , | F | 12,720 |
| Flat grant, proviacial infant birth and death ratio. | 10 | - | F | 1,409 |
| Flat grant and popilation | 10 | 5016 | F | 2,463 |
| Population eligible for hospitalization $\mathrm{X}(25$ p.c. of average national per capita coats +25 p.e. of average provincial per cspits costs) | 10 | 5 | 0 | 432,905 |
| Needy population (age group 65-69) .... | 10 | 50 | 0 | 44,905 |
| Needy blind population (age group is69) | 10 | 25 | 0 | 5,580 |
| Needy diaabled population (age group 18-69) | 10 |  |  |  |
| Needy unemployed. ...................... | 10 | 50 | 0 | 107,384 |
| Flat grant and population................ | 9 (Que.) | 40 | $\stackrel{5}{ }$ | 415 |
| Extent of provincial programs. |  | 50 | 0 | 22 |
| Ertent of provincial programs. | 8 (Alta., B.C.) | 25 | 0 | 19 |
| Based on need. | 8 (P.E.I., Que.) | $50$ | F | 368 |
| Extent of provincial programs.......... | $7 \text { (Nfld., P.E.I., }$ | - | 0 | 209 |
| Estimated construction costs. | Ont. | 37-621 | F | 1, 625 |
| Estimated suryey cost. | Man. | 50 | F | 782 |
| Estimated capital coat. | Man., Ont. | ${ }_{50}^{66}$ | 0 |  |
| Estimated cost. | Man. | 25-62 3 | F | 7,425 |
| Flat grant for province................. Extent of provincial program......... | 8 (Que., Ont.) | 50 50 | $\stackrel{\mathrm{F}}{\mathrm{F}}$ | 6,002 59 |

22.-Conditional Grants and Shared-Cost Programs as at Mid-1966-concluded

\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Department and Project \& Year Estab lished \& Basis of Provincial Apportionment of Federal Funds \& \begin{tabular}{l}
Provinces \\
Participating \({ }^{1}\)
\end{tabular} \& Provineial
Stare \& Marimum Limitation on Grant \& \[
\begin{aligned}
\& \text { Federal } \\
\& \text { Contribution } \\
\& 1984.654
\end{aligned}
\] \\
\hline \& \& \& \& p.c. \& \& \$000 \\
\hline Public Forks- \& \& \& \& \& \& \\
\hline Trans-Canada Highway.............. \& 1950 \& Provincial mileage and extent of provincial programs. \& 10 \& 10-50 \& 0 \& 76,085 \\
\hline Okanagan Flood Control. \& 1950 \& Estimated cost.......................... \& B.C. \& 50 \& 0 \& \({ }_{93}^{68}\) \\
\hline Ottawa-Hull Bridge.... \& 1961 \& Estimated cost........................ \& Que., Ont. \& \({ }_{50} 33\) \& \({ }_{0}\) \& 930
4.219 \\
\hline Urban Redevelopment \({ }^{\text {l }}\), \& 1944 \& Project cost......................... \& 10 \& - \({ }^{50-507}\) \& \(\stackrel{0}{0}\) \& 4,219

56B <br>
\hline Urban Renewval Studies ${ }^{11}$. \& ${ }_{1949}^{1856}$ \& Project cost................................ \& 10 \& $25{ }^{5}$ \& 0 \& 1,468 <br>
\hline Sewage Facilities-capital forgiveness...... \& 1954 \& Work completed. \& 10 \& 25 \& 0 \& 7,020 <br>
\hline Secretary of StateCentennial observance. . \& 1961 \& Flat grant and population............... \& 10 \& - \& F \& 976 <br>
\hline Trade and CommerceVital Statiatics. \& 1909 \& Estimated cost. \& 10 \& 6 \& 0 \& 78 <br>
\hline Transport- ${ }_{\text {Railway }}$ Grade Croasing Fund \& \& Approved construotion. \& 10 \& 12t-15 \& F \& 2,716 <br>
\hline Municipal Airports...... \& 1927 \& \& \& \& \& <br>
\hline Operational subeidy. Capital. \& 二 \& Related to airport operational defieit.. \& 10 \& $50^{7}$ \& $\stackrel{\mathrm{F}}{ }$ \& ${ }_{36}$ <br>
\hline
\end{tabular}

[^344]
## Section 5.-Provincial Government Finance

Provincial government accounting and reporting practices vary considerably so that certain adjustments to the Public Accounts figures are required in order to produce comparable statistics. For example, transactions relating to a specific function are sometimes excluded from ordinary account; therefore special or administrative funds of this nature have been added to provincial ordinary account in the tables of this Section. The fiscal years of all provinces end on Mar. 31.

Revenue and Expenditure.-Table 23 shows net general revenue and expenditure of provincial governments for the years ended Mar. 31, 1960-64, and Tables 24 and 25 give details of such revenue and expenditure for the fiscal year ended Mar. 31, 1964. "Net general revenue" and "net general expenditure" are arrived at by first analysing the combined revenues and expenditures of capital account, current or ordinary account and those working capital funds and special funds for which separate accounts are kept. Then the following types of revenue are deducted from revenue and offset against related expenditure: interest, premium, discount and exchange; institutional revenue; and grants-in-aid and shared-cost contributions from other goveraments. Table 26 gives details of the amounts paid to other governments by provincial governments, according to nature of payment.

## 23.-Net General Revenue and Expenditure of Provinclal Governments, Years Ended Mar. 31, 186-64

| Province or Territory | 1960 | 1961 | 1962 | 1963 | 1964 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Net Genbral Reverate |  |  |  |  |
|  | $3^{\prime} 000$ | 8 | \$000 | \$'000 | \$'000 |
| Newfoundland. | 60,266 | 64,461 | 68,859 | 76,131 | 80.991 |
| Prince Edward Islana, | 13,819 | 16,093 | 17.877 | 19.200 | 19,325 |
| Nova Scotia. | 80,532 | 92,225 86.628 | 102,259 | 113,788 | 113, ${ }_{9467}$ |
| Quebee...... | 605,035 | 640,711 | 758, 110 | 864,589 | 948,355 |
| Optario. | 778,450 | 833,128 | 927.113 | 1,095,310 | 1,181,895 |
| Manitoba. | 99,814 | 104,145 | 118,020 | 130,615 | 136,233 |
| Saakatchewa | 145,658 | 148,920 | 156,651 | 201,283 | 216,907 |
| Alberta. | 278,882 | 245,483 | 272,978 | 293,917 | 319,708 |
| Britioh Columbis | 313,758 | 320,288 | 346,420 | 363,927 | 398.490 |
| Yukon Territory | 2,082 | 2,308 | 2,357 | 3,423 | 4.183 |
| Northwest Territories | 1,597 | 1,744 | 1,881 | 3,510 | 4,170 |
| Canad | 2,467,236 | 2,556,134 | 2,856,760 | 3,255,814 | 3,518,547 |
|  | Net General Expenditurel |  |  |  |  |
|  | \$000 | \$000 | 8000 | $8{ }^{\prime} 000$ | \$000 |
| Newfoundland. . . . | 64,863 | 74,713 | 83,559 | 100,868 | 105,216 |
| Prince Edward Ialsnd | 20.049 | 15,386 | 19,351 | 22,545 | 22,499 |
| Nova Beotis. | 91,804 | J11,689 | 107,559 | 113,180 | 125,408 |
| Quebec....... | 79,630 6009 | ${ }^{94,868}$ | $\begin{array}{r}94,719 \\ 847 \\ \hline\end{array}$ | 1051,954 | ${ }_{1}^{112,045}$ |
| Ontario. | 8998,230 | 749,296 937 | -847,612 | - 9171,953 | 1,098,815 |
| Manitoba. | 127.695 | 177,055 | 1,037,237 | 1,146,479 | 1.262,238 |
| 8askatchewan. | 142,248 | 150,027 | 158,744 | 178,992 | 208.857 |
| Aberta. | 234,657 | 266,314 | 279.128 | 282,263 | 276.034 |
| British Columbia | 283,163 | 331,476 | 338,567 | 356, 867 | 302,370 |
| Yukon Territory ..... | 2,297 | 2,610 | 2,925 | 4,934 | 4,616 |
| Northwest Territories | 1,354 | 2,033 | 2,167 | 3,951 | 4,027 |
| Cabada. | 2,646,932 | 2,872,775 | 3,108,277 | 3,435,430 | 3,750,365 |

[^345]| Source | Nffd． | P．E．I． | N．S． | N．B． | Que． | Ont． | Man． | Sask． | Alta． | B．C． | Y．T． | N．W．T． | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Tax | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | 8＇000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄＇000 | 8＇000 | \＄＇000 |
| Corporations． | 404 | 106 | 978 | 768 | 33，323 | 17，391 | 1，399 | 1，036 | 2，365 | 3，144 | － | － | 60，914 |
| Income－ Corporations | 3，858 | 592 | 6，470 | 4，919 | 121，444 | 192，302 | 14，965 | 9，889 | 23，693 | 34，104 | － | － | 412，236 |
| Individuals． | 3，356 | 633 | 7，715 | 5，155 | 106，051 | 164，370 | 21，442 | 16，076 | 25，126 | 39，358 | － | － | 389，282 |
| Property <br> Sales－ |  | － | 96 | 451 |  | 1，404 |  | 7 |  | 6，798 | 304 | 29 | 9，089 |
| Alcoholic beverages． | 1 | 465 | 1 | 1 | － | － | － | 1 | － | 1 | 84 | － | 549 |
| Amusements and admissions | 105 | 70 | 372 | 282 | 9，099 | 13，253 | 958 | 119 | 943 | 1，761 | 15 |  | 26，977 |
| Motor fuel and fuel oil．．． | 9，043 | 3，128 | 20，577 | 17，020 | 150，832 | 194，708 | 25， 212 | 30，118 | 38，440 | 48，941 | 450 | 538 | 539，007 |
| Tobacco． | 1 | 353 | 17 | 2，051 | 24，994 | 1 | 2，842 | 1 |  | 1 |  | － | 30，240 |
| General．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． | 16，113 | 2，843 | 17，716 | 10，850 | 167，797 | 190，342 | － | 45，167 |  | 111，193 | － | － | 562,021 |
| Other commodities and servi | 二 | 二 | 395 | 二 | 11,937 36,393 | $\overline{44,121}$ |  | 2 | 2 | 5，161 | － | － | 12,332 85,679 |
| Hospital insurance premiums | － | ， | － | － |  | 94，258 | 12，840 | 17，349 | 2 | 5，101 | 二 | 二 | 124，447 |
| Other．．．．．． | 320 | 2 | 101 | 100 | 2，300 | 8，205 | 863 | 372 | 45 | 214 | － | － | 12，522 |
| Totals，Taxes | 33，199 | 8，192 | 54，420 | 41，596 | 664，170 | 920，354 | 80，521 | 120，135 | 90，614 | 250，674 | 853 | 567 | 2，265，295 |
| Government of Canada－ Statutory subsidies． | 1，656 | 657 | 2，132 | 1，745 | 3，964 | 4，624 | 2，103 |  | 2，852 |  |  |  | 23，526 |
| Fed．－Prov．Fiscal Arrangements Act 1962．．． | 33，761 | 7，393 | 31，842 | 27，916 | 70，216 |  | 15，896 | 23，592 | 10，452 | － 190 | 1，923 | 2，378 | 225，179 |
| Share of income tax on power utilities．．．．．．． | ${ }^{196}$ | ${ }^{7}$ | －638 | 40 | 4，623 | 1，019 | 15， 46 | ， | 2，742 | 501 |  |  | 9，868 |
| Totals，Government of Canada． | 35，613 | 8，104 | 34，612 | 29，701 | 78，803 | 5，643 | 18，045 | 25，721 | 16，046 | 1，984 | 1，923 | 2，378 | 258，573 |
| Privileges，Licences and Permits－ Liquor control and regulation |  | 26 | 316 | 270 |  |  |  | 104 |  | 606 | 11 |  | 55，502 |
| Motor vehicles． | 3，099 | 854 | 6，425 | 5，798 | 50，033 | 87，298 | 10，412 | 8，955 | 14，890 | 22，691 | 216 | 91 | 210，762 |
| Natural resources | 1，637 | 14 | 1，422 | 3，860 | 45，504 | 39，751 | 5，196 | 32，296 | 158，488 | 78，368 | 35 | 46 | 366，617 |
| Other． | ，915 | 119 | 754 | 989 | 12，806 | 10，762 | 2，159 | 1，626 | 2，960 | 3，182 | 115 | 34 | 36，421 |
| Totals，Privileges，Licences and Permits． | 8，254 | 1，013 | 8，917 | 10，917 | 128，008 | 165，240 | 20，977 | 42，981 | 177，518 | 104，847 | 377 | 253 | 669，302 |
| Sales and services． | 403 | 399 | 2，185 | 1，767 | 11，711 | 16，023 | 2，484 | 5，943 | 6，150 | 6，841 | 76 |  |  |
| Fines and penal | 363 |  | 361 | 318 | 2,195 | 2，712 | 2， 614 | 1，036 | 1，988 | ， 966 | 31 | 25 | 10，681 |
| Liquor profits． | 2,783 51 | 1,498 22 | 13,086 36 | 10,099 93 | 45,600 10,214 | 70,748 520 | 13,233 23 | 15,711 5,060 | 25,807 1,412 | 32,514 354 | 915 4 | 903 4 | 232,877 17,793 |
| Totals，excluding Non－revenue and Surplus Receipts． | 80，666 | 19，300 | 113，597 | 94，491 | 940，701 | 1，181，240 | 135，897 | 216，587 | 319，535 | 398，180 | 4，179 | 4，165 | 3，508，538 |
| Non－revenue and surplus receipts | 325 | 25 | 70 | 132 | 7，654 | 655 | 336 | 320 | 173 | 310 | 4 | 5 | 10，009 |
| Totals，Net General Revenue． | 80，991 | 19，325 | 113，667 | 94，623 | 948，355 | 1，181，895 | 136，233 | 216，907 | 319，708 | 398，490 | 4，183 | 4，170 | 3，518，547 |

[^346]| Function | Nfid. | P.E.I, | N. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Cennda |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | $8{ }^{2} 000$ | \$'000 | \% 000 | \$ 000 | \$ 000 | \$ ${ }^{+000}$ | \$'000 | \$'000 | 8'000 | \$ ${ }^{+000}$ | \$'000 | 81000 |
| General Government........................... | 5,169 3,914 | 1,359 $\mathbf{5 0 6}$ | 5,339 3,670 | 4,644 2,967 | 45,305 51,657 | 50,422 59,873 | 5,451 7,132 | 8,563 7,964 | 6,349 16.207 | 20,375 17,110 | 498 | 117 | 153,592 172,100 |
| Traneportation and CommunicationsHighways, roads and bridges. <br> Waterways. $\qquad$ | 22,844 -95 | 6,587 14 6 | 30,314 -400 55 | 30.387 589 - | 196,083 452 489 | ${ }_{282,120}$ | 30,507 46 | 30.833 387 510 | 60,096 $\mathbf{2 9 8}$ | 93,749 2,107 | 757 36 | $\begin{array}{r}226 \\ \hline 7\end{array}$ | 784,512 4,424 1,067 |
| Totals, Transportation and Communications | 22.939 | 6,607 | 30,769 | 30,976 | 197,024 | 282,129 | 30,543 | 31,730 | 60,394 | 95,856 | 783 | 233 | 790,003 |
| Health and Social Wellare-Health- |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Gederal health......... | 212 | 85 | 133 | 345 | 4,323 | 4,126 | 733 | 626 | 926 | 1.340 | 10 | 20 | 12,879 |
| Public health. | 783 | 420 | 2.229 | 1,929 | 24,934 | 10.220 | 2.742 | 4,014 | 1,130 | 4,749 | 19も | 458 | 53,804 |
| Medical dental and allied services | 1,959 | 140 | ${ }_{21} 202$ | 21.194 | 2,798 | 2,584 | 1.647 | 24,038 | 4,057 | 5,447 | - | - | 43,041 |
| Hospital care............... | 13,280 | 2,354 | 21,359 | 21,112 | 151,125 | 208,734 | 33,396 | 37,661 | 42,226 | 50.581 | 429 | 283 | 582,490 |
| Social Welfare- Aid to aged persons. | 2,036 | 764 | 2.315 | 2,335 | 23,511 | 14,982 | 2,811 | 7,812 | 7.768 | 14,190 | 7 | 53 | 78,084 |
| Aid to blind persons. | 104 | 18 | 168 | 151 | 659 | 492 | 543 | 216 | 152 | + 300 | 1 | 9 | 2,411 |
| Aid to unemployed and unemployables.... | 8.770 | 212 | 4,892 | 1,225 | 38.730 | 21.831 | 3,606 | 6,013 | 10,852 | 10,890 | 41 | 84 | 106,88 ${ }^{\text {b }}$ |
| Mothers' allowances. . . . . . . . . . . . . . . . . . . . | - | 213 | - | 2.023 | 22.538 | 11, 130 | --15 | - | 1,010 | - | - |  | 36,914 |
| Child welfare. . . . . . . . . . . . . . . . . . . . . . . . . . | 576 | 185 | 968 | 547 | 30.792 | 6,482 | 2,445 | 1,400 | 3,042 | 4,047 | 52 | 52 | 50.588 |
| Labour. | 79 | 13 | 158 | 327 | 4.071 | 2,091 | , 370 | 817 | 431 | ${ }_{5} 516$ | 1 | - | 8,369 |
| Other socisl welfare | 1,202 | 74 | 68 | 459 | 11,048 | 4,594 | 1,801 | 2.629 | 2.842 | 2,135 | 97 | 14 | 26,963 |
| Totals, Health and Social Wellare.... | 29,001 | 4,478 | 32,485 | 30,647 | 314,524 | 286,948 | 49,694 | 84,226 | 74,436 | 94,145 | 833 | 984 | 1,902,399 |
| Recreational and Cultural Services. | 365 | 247 | 978 | 503 | 4,241 | 12,769 | 850 | 3,334 | 2,937 | 3,202 | 44 | 72 | 29,632 |
| Education- Schools operated by local authoritiea, | 20,530 | 3,752 | 23,987 | 12,465 | 202,338 | 265,433 | 28.682 | 39.481 | 78,022 | 71,630 | 1,528 | 1,441 | 749,284 |
| Universities, colleges and other schools..... | 6,640 | 1,070 | 5,084 | 5,860 | 104,105 | -94,872 | 8,196 | 11,052 | 9,592 | 17,468 | 1,528 | 1, 13 | 263,952 |
| Education of the handicapped. | 252 | 29 | . 213 | 231 | 505 | 5,345 | 355 | . 217 | 734 | 1,086 | - | 2 | 8.969 |
| Superannuation and pensions. | $-75$ | 3 | 2,257 | 316 383 | -67678 | 20,768 | 306 | 1.281 |  | 3,881 | - | 6 | 28,080 |
| Other | 701 | 164 | 539 | 383 | 27,677 | 5,271 | 1,400 | 962 | 1,040 | 1,064 | $\dagger$ | 6 | 39,188 |
| Totals, Education.. | 28,048 | 5,018 | 32,080 | 19.235 | 333,942 | 391,689 | 38,939 | 52.983 | 89,389 | 95,129 | 1,529 | 1,462 | 1,089,453 |


| Function | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \%'000 | \$'000 | \%'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Natural Resources and Primary IndustriesFish and game. | 1,791 | 117 | 285 | 444 | 8,757 | 3,393 | 556 | 402 | 919 | 1,457 |  | 80 | 18,230 |
| Forests......................................... | 1,882 | 125 | 1,374 | 2,872 | 17,217 | 21,140 | 1,170 | 557 | 6,136 | 15,901 | 5 | 8 | 67,379 |
| Lands: settlement and ag | 995 | 866 | 1,659 | 1,514 | 36,136 | 11,122 | 8,306 | 8,281 | 7,335 | 5,038 | - |  | 81,252 |
| Minerals and mines....... | 145 | 1 | ${ }^{6} 641$ | 266 | 2,781 | 1,855 | 509 | 1,529 | 3,506 | 2,187 | - |  | 13, 420 |
| Water resources. | - | - | 28 | 55 | 2,489 | 4,043 | 7,599 | 1,922 | 1,699 | 908 | 42 | - | 18,776 |
| Other | 285 | 55 | 169 | 388 | 2,603 | 1,000 | 1,365 | 2,295 | 587 | 214 | - | - | 8,961 |
| Totals, Natural Resources and Primary Industries. | 4,098 | 1,164 | 4,156 | 5,539 | 69,983 | 42,553 | 19,496 | 14,986 | 20,182 | 25,705 | 76 | 80 | 208,018 |
| Trade and industrial development........... | 500 370 | 309 51 | 1,354 160 | 805 364 | 9,482 1,034 | 6,944 $\mathbf{2}, 293$ | 1,214 | 2,008 1,584 | 1,986 1,510 | 1,443 303 | 52 85 |  | 26,103 8,570 |
| Debt charges excluding debt retirement... | 7,979 | 2,193 | 12,853 | 9,753 | 42,171 | 62,126 | 4,626 | -1,779 | -16,225 | $-1,370$ | 178 |  | 122,505 |
| Unconditional grants to local governments..... | 1,907 | ${ }^{2} 147$ | 1,332 | 6,387 | ${ }_{250}$ | 35,623 | 2,990 | -10 | 16,682 | 13,353 | 148 | 97 | 79,226 |
| Contributions to government enterprises....... | 788 |  |  | 58 |  | 824 |  |  |  | 2,119 |  |  | 3,789 |
| Other expenditure........................ | 138 | 112 | 184 | 63 | 19,470 | 4,613 | 299 | 1,076 | 1,486 | 25,111 |  | 204 | 52,756 |
| Totals, excluding Non-expense and Surplus Payments..................... | 105,216 | 22,491 | 125,360 | 112,031 | 1,089,083 | 1,238,804 | 162,027 | 206,695 | 275,333 | 392,481 | 4,598 | 4,027 | 3,738,146 |
| Non-expense and surplus payment | - | 8 | 48 | 14 | 7,732 | 1,436 | 211 | 2,162 | 701 | -111 | 18 | - | 12,219 |
| Totals, Net General Expenditure (excluding debt retirement). | 105,216 | 22,499 | 125,408 | 112,045 | 1,096,815 | 1,240,240 | 162,238 | 208,857 | 276,034 | 392,370 | 4,616 | 1,027 | 3,750,365 |

28．－Amounts Paid to Other Governments by Provincial Governments，Year Ended Mar．31，1964

| Nature of Payment | Nfld． | P．E．I． | N．s． | N．B． | Que． | Ont． | Man． | Sask． | Alta． | B．C． | Y．T． | N．W．T． | Cansda |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 51000 | \＄000 | \％ 000 | \＄ 000 | \＄＇000 | \＄＇000 | \＄＇000 | \％ 000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄ 000 | \＄＇000 |
| Paid to Lacal Gorernments－ Shared－revenue contributionsl．．．．．． Subsidies | 1，807 | 379 | 1．30 ${ }^{10}$ | 6，374 | 250 | 1,273 32,189 | 2，724 | － | 15，000 | 13，353 | 148 | 97 | 1,503 73,893 |
| Grants in tieu of local tazes on provincial government property． | 1，807 | 369 68 | 1，322 | 6.374 13 | 250 | －2，211 | 2,724 268 | 10 | 15,00 1,482 | 13，353 | 148 | 97 | 7,683 4,080 |
| Granto－in－Aid and Shared－Cost Contributions－ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Corrections ．．．．．． | － | 二 | 二 | 33 | － | 14 | － | 二 | $\square 13$ | － | $\cdots$ | － | 47 |
| Police protection | － | －2 | － | － | 1，100 | 3108 198 | 二 |  | 313 | 二 |  |  | 623 1,300 |
| Other protectio | － | － |  | － | 125 | 454 | － | － | － | － | － |  | ． 484 |
| Highways，roads and bridg | 287 | 51 | 209 | 294 | 7，632 | 87.618 | 3，094 | 7，000 | 6.183 | 471 | 49 | 25 | 112，822 |
| Public healte． | $\sim^{66}$ | 二 | －${ }^{47}$ | 二 | 8，097 | 3,304 42 | ${ }_{110}^{96}$ | $\xrightarrow{190}$ | 1，640 | 322 |  |  | 11，756 |
| Hoapital care ${ }^{3}$ ．， | － | － | 843 | 652 | － | － | － | 3 | － | － | － |  | 1．498 |
| Aid to aged persons（homes）． | － | － | $\rightarrow$ | － | － | 8，097 | － | － | － | 26 | － | $\cdots$ | 8，123 |
| Aid to unemployed and unemploy | － | － | 1，609 | 2.088 | － | ${ }^{26}, 288$ | 2，340 | 5，895 | 2，736 | 18，888 | － | 20 | 60， 844 |
| Child welfare． | － | － | － | 295 | $\cdots$ | 4，779 |  |  |  | － | － | － | 5，075 |
| Other health and social wellare | － | － | 二 | － | － | 285 | 28 | 1 | － | － | － | － | 314 |
| Parics，beaches and other recreational are | － | － | － |  |  | ${ }_{640}^{46}$ | 二 | ${ }^{4}$ | 14 | － | 4 | 二 | ${ }_{644}^{520}$ |
| Schools operated by local authoritiea ${ }^{4}$ | － | 3，836 | 22，158 | 11，645 | 200，089 | 319，469 | 29，359 | 37，634 | 75，029 | 68，384 |  | $173{ }^{3}$ | 767，476 |
| Lands－ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Settlement and agricultur | － | － | 1 | 7 | 305 | 620 | 340 | 177 | 210 | 81 | － | － | 1.941 |
| Other．．．．．．．．．．．．．．．．．．．．．．．． | － | － | － | 5 | 38 | 65 | 196 | 1，302 | － | － | － |  | 1，606 |
| ment．．．．．．．．．．．．．．．．．．．．．． | － | － | T05 | 223 | － | 439 | 9 | 239 | 258 | 10 | － | － | 1，172 |
| Civil defence． | $\checkmark$ |  | 105 | 108 | 307 | 1，269 | － | － | 178 | 881 | － |  | 2，556 |
| Winter worke projects | 255 | 130 | I12 | － |  | 7,783 28 | 1，331 | 2,845 11 | 4，290 | 5，722 1 | 二 | 37 | 43,783 5,482 |
| Other payments． |  |  |  | 1 | $5,446^{8}$ | 22 |  |  |  | 1 |  | 1 | 5，482 |
| Totals，Pald to Local Governments． | 2，515 | 4，166 | 28，481 | 21，746 | 242，473 | 497，852 | 35，887 | 55，36\％ | 107，527 | 108，849 | 201 | 353 | 1，107，450 |
| Paif to Government of Canada－ Police eervices－RCMP Other ${ }^{\circ}$ ． | 901 | 159 | 888 | ${ }^{646}$ | 160 | 35 | 1，277 | 1,370 1,126 | 1，843 | 2，326 | － | － | 9.410 1,321 |
| Totals，Paid to All Governments．．．． | 3，416 | 4，325 | 27，309 | 22，392 | 342，833 | 497，987 | 41，164 | 67，856 | 169，370 | 111，175 | 241 | 353 | 1，118，181 |

${ }^{1}$ N．S．－Share of Crown land leases；Ont－－share of liquor licences；Alta．－$\rightarrow$ hare of liquor fines． ment enterprises． Excludea smounte paid directly to municipal hospital boards．
：Does not include grante in liet of taxes paid by provincial govern－
 The amount ahown above was paid to rebool diatricts．${ }^{\top}$ Local schools are operated by the Federal Government，religious denominations and school districts． Corporation．${ }^{2}$ ．Cousiats paid to school districts．
 pragram $\$ 100,000$ ，Department of Northern Affairs and National Resources－water rights $\$ 8,000$ ．

Debt of Provincial Governments.-Table 27 shows total bonded debt, by province, as at Mar. 31, 1963-65. Table 28 shows that the majority of bond issues are payable in Canada. Table 29 provides details of total direct and indirect debt of provincial governments as at Mar. 31, 1965.
27.-Gross Bonded Debt (exclusive of Treasury Bills) of Provincial Governments, as at Mar. 31, 1563-65

| Province and Year | Bonded Debt | Average Interest Rate | Average Term of Issue | Province and Year | Bonded Debt | Average <br> Intereat Rate | Average Term of Lsasue |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ 000 | p.c. | yrs. |  | \$1000 | p.c. | yrs. |
| Newfoundland- |  |  |  | Ontario-concluded |  |  |  |
| 1963. | 139.378 | 5.38 | 19.2 | 1984........... | 1,837,320 | 4.29 | 21.6 |
| 1964 | 154.364 | 5.41 | 20.0 | 1965.. | 2,047,107 | 4.85 | 21.4 |
|  | 180,400 | 5.48 | 20.8 | Manitobs- |  |  |  |
| Prince Edward |  |  |  | 1963. | 294.328 | 4.34 | 16.4 |
| Island- |  |  |  | 1964................. | 301,610 | 4.36 | 15.9 |
| 1963. | 31,110 | 4.75 | 15.5 | 1966............... | 295,148 | 4.43 | 16.2 |
| 1964. | 31,604 | 5.02 | 16.7 |  |  |  |  |
| 1965. | 37.904 | 5.10 | 17.3 | 19askatchewan- | 530,815 | 4.68 | 18.7 |
| Nova Scotia- |  |  |  | 1964................ | 599, 120 | 4.69 | 18.0 |
| 1963... | 341,470 | 4.22 | 18.3 | 1985................ | 595,740 | 4. 46 | 18.9 |
| 1964. | 3+4,171 | 4.36 | 18.6 |  |  |  |  |
| 1065. | 365,282 | 4.37 | 19.4 | Alberta- ${ }_{\text {d }}$ | 12,915 | 2.88 | 18.1 |
| New Brunswiok- |  |  |  | 1964................. | 10,983 | 2.83 | 18.8 |
| 1963............. | 262,590 | 4.26 | 18.8 | 1965................. | 9.480 | 2.84 | 19.5 |
| 1964. | 262.980 | 4.38 | 19.4 |  |  |  |  |
| 1965. | 284,984 | 4.50 | 20.3 | $\begin{aligned} & \text { Brtish Columbia- } \\ & 1983 . . . . . . . . . . . . . . . . . . . . . ~ \end{aligned}$ | 74,207 | 3.42 | 24.1 |
| Quebec- |  |  |  | 1964.................. | 74,007 | 3.42 | 24.2 |
| 1963... | 781,975 | 4.52 | 18.5 | 1965............... | 70,411 | 3.44 | 24.6 |
| 1964. | 974,957 | 4.74 | 17.2 |  |  |  |  |
| 1865. | 1,085,728 | 4.94 | 17.4 | Totals- |  |  |  |
| Ontario- |  |  |  | 1963................. | 4,340,398 | 4.35 4.47 | 19.8 |
| 1963................ | 1,871,610 | 4.20 | 21.5 | 1885................. | 4,972, 185 | 4.57 | 19.7 |

28.-Gross Bonded Debt' (exclusive of Treasury BIIIs) of Provinclal Governments, by Place of Payment, as at Mar. 31, 1363-65

| Payable in- | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: |
|  | \$000 | $8 \prime 000$ | \$000 |
| Canada. | 3,316,134 | 3,672,442 | 3,939,482 |
| Britain. | - | - | - |
| Britain and Canada. | 2,974 | - | - |
| United States. | 894,212 | 884,910 | 945,140 |
| United States and Canads. | 68,076 | 52,148 | 50,654 |
| Britain, United States and Canada. | 51,899 | 32,513 | 27.800 |
| Switzerland. | 9,103 | 9, 103 | 9;103 |
| Totals | 4,440,398 | 4,651,116 | 4,972,185 |

[^347]| Direct and Indirect Dobt | Nfld． | P．E．I． | N．S． | N．B． | Que． | Ont． | Man． | Ssak． | Alta． | B．C． | Y．T． | N．W．T． | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \％ 000 | \＄000 | \＄＇000 | \＄＇000 | 5＇000 | \＄＇000 | \＄000 | \＄000 | \＄＇000 | \＄＇000 | \＄＇000 | \＄000 | \＄＇000 |
| Dreet Debt－ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bonded debt． | 180，400 | 37.804 | 365，282 | 284，984 | 1，085，728 | 2，047，1071 | 295，149 | 595， 740 | 9，4802 | 70，411 |  | － | 4，972，185 |
| Less sinking fund | 21，217 | 5，823 | 85，052 | 75，357 | 124，141 | 2，154，821 | 60，335 | 108，232 |  | 70，411 |  |  | 708，389 |
| Net bonded debt． | 159，183 | 31，981 | 279，330 | 209，627 | 961.687 | 1，892，280 | 234，814 | 487，508 | 9，480 | \％，41 | 二 | 二 | 4，266，798 |
| years） | $\rightarrow$ | － | － | 8，236 | 60，000 | － | 21，809 | 23，910 | 6，310 | － | － | － | 120，265 |
| Net Funded Debt． | 159，183 | 31，981 | 279，330 | 217，863 | 1，021，587 | 1，892，288 | 255， 823 | 511，418 | 15，790 | － | $\square$ | － | 4，386，081 |
| Sbort－term treasury bills（term of less than 2 уезгя） |  | 7，300 | 10，500 | 11．800 | 40，000 | － | 63，485 | 18，500 | － |  | － |  | 149.585 |
| Temporary loans and overdrafts．．．．．．．．．．． | 19，32b | 8，822 | 13，772 |  |  |  | 12，485 | 6，637 | 20 | 6，283 |  |  | 67，325 |
| Trust funds，savings and other deposita．．．．． |  | 4，814 $\mathbf{2 , 4 2 8}$ | 17，987 | 1,317 11,658 | ${ }_{216,} 3480{ }^{\text {a }}$ | 228,462 83,2694 | 2.818 3.116 |  | 20 16.038 | 13,915 25,088 | ［ ${ }^{83}$ |  | 251,763 419,153 |
| Accounts and other paysbles．．．．．．．．．．．．．．．．． ture． | 24,677 346 | 2，428 | 17,987 4,078 | 11,638 8,877 | 216,200 24,659 | 88,269 50,109 | 3,116 19.291 | 7,252 7,532 | 16.038 103 | 25，086 | 7，568 | 3，894 | 419,153 112.998 |
| Totak，Direet Deht（less Slnking Fuads） | 203，582 | 55.345 | 325，952 | 249，515 | 1，302，794 | 2，254，126 | 357，518 | 549，340 | 31，851 | 45，264 ${ }^{\text {4 }}$ | 7，651 | 3，894 | 5，386，882 |
| Indirect Debt |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Guaranteed bonds or debentures． | 23，412 | 8，125 | 3，2685 | 111．527 | 1，890，005 | 1，771，389 | 392，205 | 16，719 | 430，602 | 1，470，062 | － | － | 6．117．312 |
| Net zuaranteed bonds or debentur | 23，412 | 8，125 | 2.759 | i10，226 | t， 838. | 1，722，095 | 378，723 | 16，719 | 12,197 418,405 | 1，92，729 | 二 |  | $\begin{array}{r}221,182 \\ 5,896,130 \\ \hline\end{array}$ |
| Guaranteed bank loans．．．．．．．．．．． | 22，889 | 8,2517 | 2，288 | 5，524 | 3，798 | 5，773 | 318， 123 | 8，395 | 1，838 | 1,731 | － | － | 56，588 |
| Municipsl Improvement Agsistance |  |  |  |  |  |  |  |  |  |  |  |  |  |
| loans．．．．．．．．．．． | － | $\cdots$ | 142 | 57 | 608 | － | － |  |  |  | － | － | 937 |
| Other guarantee | 3 |  |  | － | － |  | － | 2，741 | 4，854 | 7，150 |  |  | 14，748 |
| Totals，Indirect Debt（less Sinking runds） | 46，284 | 16，376 | 4，985 | 115，80\％ | 1，842，939 | 1，727，868 | 378，7638 | 21，927 | 425，244＊ | 1，385，250 | － | － | 5，968，383 |
| Totals，Direet and Indirect Deht（less sinking Funds） | 249.816 | 71，721 | 330，887 | 365，322 | 3，145，783 | 3，981，994 | 736，241 | 874，267 | 457，175 | 1，430，514 | 7，651 | 3，894 | 11，355，265 |
|  | ＊ | \＄ | \＄ | \＄ | \＄ | $\delta$ | \＄ | \＄ | \＄ | \＄ | \＄ | \＄ | \％ |
| Direct debt（less ainking funds）per capita | 409 | 512 | 428 | 400 | 230 | 335 | 372 | 578 | 22 | 25 | 510 | 158 | 275 |
| $\square$ | 93 | 152 | 6 | 186 | 326 | 257 | 394 | 26 | 293 | 774 | 510 | 156 | 305 |

1 Includes bonds issued by the Ontario Junior Farmer Establishment Loan Corporation $\$ 20,000,000$ and by the Ontario Municipal Improvement Corporation $\$ 29,000,000$ ． 2 Exeludes bonds due 82,000 ．Includes debts aseumed by the province as followa：Metropolitan Boulevard $\$ 63,290,282$ ，bonds issued by the Quebec Municipal Commis－
 Ontario Savinga Office $\$ 80,489000$ nt Mar．31．1965．${ }^{2}$ ．Excludes debt of toll road suthority．${ }^{2}$ Excludes bonds of the Halifar－Dartmauth Bridge Commission \＄5，546，000．$T$ Amount authorized；information Excludes debt of toll raid sut debentures having a par value of $\$ 4,411$ ，co0，on gewage dispofal and water supply debentures having a par value of province bas guaranteed the interest on agohool district elderly persons housing act of $\ddagger 711,060$ ．$\quad$ Excludes guaranteed interest under the School Borrowing Assiatance Act and the School Building Assistance Act on principal borrowings of $\$ 11,151,000$ ．

## Section 6.-Municipal Government Finance

Municipal Taxation.-Table 30 shows, for the year 1963, local taxes levied by municipalities and by some school authorities and total taxes outstanding at the end of the year. Because of the considerable differences in the division of responsibility for services between the provincial governments and their respective municipalities, these figures should not be used as a basis for interprovincial comparisons of the relative burden of municipal taxation.
30.-Municlpal Taration, by Province, 1963

| Item | Newfound. land | Prince Edward Lsland | Novs Scotia | New Brungwick | Quebee | Ontario |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Taxation revenue. . . . . . . . . . . . . . . . . . . . $\$$ \% 000 | 5.778 | 3,488 | 45,979 | 36,799 | 429,037 | 743.998 |
| Tax Collections, Current and Arrears- |  |  |  |  |  |  |
|  | 5,267 | 3,246 | 43,938 | 35,163 | 419,512 | 741,428 |
| Percentage of taxation revenue. . . . . . . . p.c. | 91.16 | 93.06 | 95.56 | 95.55 | 97.78 | 99.65 |
| Taxes receivable, current and arrears..... \$ \$000 | 2,666 | 1.013 | 15,872 | 13,082 | 80,872 | 81,263 |
| Percentage of taxation revenue.......... p.c. | 46.14 | 29.04 | 34.08 | 35.55 | 18.85 | 10.82 |
|  | Manitoba | Saskatchewan | Alberta | Critish ${ }_{\text {Bremb }}$ | Yukon Territory | Nortbweet Territories |
| Taxation revenue......................... . $\mathbf{8 0 0 0}$ | 88,540 | 93,632 | 143,173 | 181,560 | 227 | 412 |
| Tax Collections, Current and Arrears- |  |  |  |  |  |  |
| Total.................................... . $\mathbf{\$} \mathbf{\prime} 000$ | 86,184 | 91,806 | 138.597 | 161,436 | 223 | 405 |
| Percentage of tasation revenue.......... p.e. | 97.34 | 98.05 | 96.80 | 99.92 | 98.23 | 98.30 |
| Taxes receivable, current and arrears..... $\$ \mathbf{*} 000$ | 15,727 | 19,661 | 26,802 | 8,831 | 113 | 114 |
| Percentage of taxation revenue.......... p.c. | 17.76 | 21.00 | 18.72 | 5.47 | 49.78 | 97.67 |

Municipal Revenue, Expenditure and Debt.-Tables 31, 32 and 33 show comparative totals and details of current revenue and expenditure of municipal governments, by province, and Table 34 sets out the direct and indirect debt of local governments for the fiscal years ended nearest Dec. 31, 1963.

> s1.-Current Revenue and Expenditure of Municipal Governments, by Province, Fiscal Years Ended Nearest Dec. 31, 1963

| Province | Current Revenue ${ }^{1}$ | $\begin{gathered} \text { Current } \\ \text { Expenditure } \end{gathered}$ | Province or Territory | Current Revenue | Current Erpenditures |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ ${ }^{+000}$ | 8000 |  | \$'000 | \$\%000 |
| Newfoundland ${ }_{\text {Prince Edward İsland............. }}$ | 9,130 | 9,260 | Saskatchewan. | 126,600 | 125.417 |
|  | 4,289 | 4,263 | Alberta. . . . . . . . . . | 207, 266 | 206,768 |
| Novs Scotia. ....... | 60. 507 | 60,480 | British Columbia..... | 231,624 | 228,281 |
| New Brunswick | 52,410 510,519 | 52,267 519,772 | Yukon Territory ........ | 563 708 | 699 |
| Ontario. | 510,519 992,922 | 519,772 978,485 | Northwest Territories. | 70 |  |
|  | 111,201 | 110,987 | Canada | 2,397,739 | 2,287,138 |

[^348]2 Inclades defieit from previona years (
32.-Detalls of Current Revenue of Municipal Governments, Fiscal Years Ended Nearest Dec. 31, 1963

| Source | Nfld. | P.E.I. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 | \$'000 |
| Taxes, General and School- |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Real property.... | 3,305 4 | $\begin{array}{r}\text { 2,741 } \\ \hline 137\end{array}$ | 34,443 | 25,093 5,956 | 299,526 | 721,649 | 73, 727 | 86,967 | 122,840 | 146,506 | 187 | 333 | 1,517,317 |
| Personal property | 1,252 | 139 396 | 7,263 | 5,956 1,929 | 28,420 | i. | 6,339 | i* | 7,774 | 3,782 | $\ldots$ | $\ldots$ | 13,360 51,733 |
| Poll...... | 187 | 135 | 1,523 | 3,237 |  | 82 |  | 51 |  |  | $\cdots$ | $\cdots$ | 5,221 |
| Sales and amusement | 935 | $\cdots$ |  |  | 59,881 | ... | 504 | 1,114 | ... | ... | ... | $\ldots$ | 62,434 |
| Other...... | 26 | - | 280 | 396 | 10,445 | ... | 58 | 235 | - | 17 | ... | ... | 11,457 |
| Special assessments (owners' share) and charges. | 69 | 79 | 629 | 188 | 30,765 | 22,268 | 7,912 | 5,265 | 12,559 | 11,261 | 40 | 73 | 91,108 |
| Totals, Taxes. | 5,778 | 3,488 | 45,979 | 36,799 | 429,037 | 743,999 | 88,540 | 93,632 | 143,173 | 161,566 | 227 | 412 | 1,752,630 |
| Licences and permits. | 190 | 59 | 441 | 344 | 7,473 | 8,150 | 1,798 | 2,626 | 3,762 | 7,007 | 49 | 8 | 31,907 |
| Interest, tax penalties, etc. | 8 | 7 | 616 | 416 | 2,511 | 9,620 | 1,829 | 1,768 | 2,199 | 2,876 | 3 | 4 | 21,857 |
| Contributions, Grants and SubsidiesGovernments. |  |  |  |  |  | 160,989 | 10,892 | 13,936 | 27,654 | 37,247 | 242 | 235 | 298,443 |
| Government enterprises. | 111 | 92 | 1,304 | 721 | 6,726 | 9,570 | 3,027 | 7,773 | 15,387 | 5,311 | 36 | 8 | 50,066 |
| Other.. | 539 | 1 | 439 | 46 | 3,542 | 669 | 653 | 894 | 102 | 844 |  |  | 7,729 |
| Miscellaneous revenue. | 536 | 81 | 1,255 | 822 | 31,682 | 44,651 | 3,082 | 5,050 | 14,164 | 11,635 | 6 | 41 | 113,005 |
| Totals, Revenue. | 9,120 | 4,239 | 59,544 | 51,953 | 503,435 | 977,648 | 109,821 | 125,679 | 206,441 | 226,486 | 563 | 708 | 2,275,637 |
| Surplus from previous years. | 10 | 50 | 963 | 457 | 7,084 | 15,274 | 1,380 | 921 | 825 | 5,138 | - | - | 32,102 |
| Grand Totals.. | 9,130 | 4,289 | 60,507 | 52,410 | 510,519 | 992,922 | 111,201 | 126,600 | 207,266 | 231,624 | 563 | 708 | 2,307,739 |

${ }^{1}$ Included with real property.

| Function | Nffd. | P.E.L. | N.S. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y,T. | N.W.T. | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 8'000 | \$'000 | \$ 000 | \$'000 | \$'000 | \$ 000 | \%000 | \$'000 | \%'000 | \$'000 | \$000 | \% 000 | \$'000 |
| General goverament. | 1,011 | 279 | 3,760 | 3,384 | 58,721 | 59,680 | 8,150 | 7.703 | 12,547 | 12,100 | 63 | 97 | 162,458 |
| Protection of persons and property. | 585 | 457 | 7,329 | 5,297 | 75,584 | 119,814 | 12,700 | 0,328 | 22,878 | 30,637 | 113 | 60 | 284,742 |
| Public works. | 2,160 | 401 | 2,927 | 3,377 | 70.998 | 185,004 | 15,674 | 23,888 | 27,566 | 17,071 | 95 | 73 | 299,244 |
| Sanitation and waste removal. | 883 | 33 | 1,255 | 776 | 13,566 | 42,938 | 3,348 | 2,999 | 6,487 | 7,488 | 62 | 32 | 79,887 |
| Health. | 10 | 5 | 3,801 | 971 | 6,760 | 17,331 | 2,101 | 3,855 | 11, 408 | 3.018 | - | 4 | 48,570 |
| Social welfare. | 2 | 83 | 3,336 | 4,196 | 6,942 | 56,215 | 4,827 | 7,032 | 5,276 | 24.475 | $\sim$ | 20 | 112, 404 |
| Education. | 389 | 1,471 | 20,297 | 21,405 | 108,420 | 288,623 | 33,221 | 41,473 | 35,141 | 56,078 | $\rightarrow$ | 208 | 604.726 |
| Recreation and community service | 214 | 74 | 933 | 1,068 | 18,015 | 37,108 | 3,712 | 4,423 | 8.083 | 11,085 | 14 | 30 | 84,754 |
| Debt Charges- <br> Debenture and other long.term ${ }^{2}$. <br> Other | 848 226 | $\begin{array}{r} 1,218 \\ 44 \end{array}$ | $\begin{array}{r} 11.868 \\ 577 \end{array}$ | 8,181 617 | 133,732 1,665 | 167.496 12.895 | 16.888 370 | $\mathbf{1 3 , 1 5 2}$ $\mathbf{4 3 6}$ | 40,007 555 | 46.029 | 79 | 48 | 439.342 18,183 |
| Contributions to own government enterprises (deficits and levjes) | 431 | 35 | 61 | 420 | 101 | 15,134 | 2,142 | 3,157 | 3,296 | 2,696 | - | 34 | 27,507 |
| Provision for reserves. | 123 | 98 | 1,530 | 780 | 487 | 10,271 | 2,438 | 2,455 | 2,778 | 5,021 | 7 | 7 | 25,992 |
| Contributions to capital and loan fund. | 2,191 | 46 | 2,114 | 378 | 28,120 | 19,081 | 2,827 | 3.799 | 6,750 | 10,495 | 85 | 62 | 75,948 |
| Joint or special expenditure. | - | $\rightarrow$ | - | - | - | 3,859 | 267 | - | 148 | - | - | - | 4,274 |
| Miscellaneous expenditure. | 177 | 19 | 613 | 1,440 | 3,705 | 11,750 | 1,058 | 1,891 | 3,697 | 1.290 | 8 | 20 | 25,688 |
| Totals, Expenditure. | 9,200 | 4,263 | 55,901 | 52,240 | 619,772 | 977,204 | 103,521 | 125,404 | 206,817 | 225,281 | 528 | 694 | 2,293,673 |
| Deficit from previous yeare. | - | - | 659 | 27. | - | 1,231 | 1,466 | 13 | 151 | - | $\sim$ | 9 | 3,456 |
| Grand Tetals. | 9,200 | 4,263 | 40,460 | 52,267 | 519,7\%2 | 978,435 | 118,987 | 125,417 | 246,768 | 228,281 | 526 | 695 | 2,297,135 |

[^349]
## 84.-Debt of Munictpal and Sehool Corporations, as at Fiscal Year Ends Nearest Dec. 31, 1963

| Direct and Indirect Debt | NAd. | P.E.L. | N. 8. | N.B. | Que. | Ont. | Man. | Sask. | Alta. | B.C. | Y.T. | N.W.T. | Canada |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ 000 | \$ 000 | \$'000 | \$'000 | \$000 | \$ 000 | \$ 000 | \$ ${ }^{\prime} 000$ | \$ 000 | \$'000 | \$'000 | $8+000$ | $8{ }^{*} 000$ |
| Dirert Debt (less Sinkting Funds)- |  |  |  |  |  |  |  |  |  |  |  |  | ; |
| Debenture debt............................... | 20,436 | 12,150 | 118,718 | 90,364 | 1,857, 413 ${ }^{1}$ | 1,973,520 | 214,280 | 193,556 | 510,475 | 640,003 | 890 | 218 | 5, 627, 227 |
| Less sinking funds. . . . . . . . . . . . . . . . . . . . . . | 143 | 1,869 | 3.548 | 7,410 | 13.103 | 108, 801 | 23,189 | 14,035 | 3,728 | 52,672 | - | - | 228,478 |
| Net debenture debt. | 20,293 | 10,290 | 110,170 | 83, 154 | 1,844,310 | 1,884,710 | 191,111 | 179,521 | 506,747 | 487.331 | 890 | 213 | 5,298,749 |
| Temporary loans and bank overdrafts ...... | 5,672 | 787 | 13,504 | 11,111 | 153,922 | 80,154 | 16.552 | 8,286 | 10,762 | 11,554 | - | 25 | 322,319 |
| Accounts payable and other liabilities ...... | 8,183 | 471 | 12,922 | 7,823 | 186,338 | 237,281 | 23.326 | 22,002 | 34,448 | 38,998 | 101 | 162 | 567,880 |
| Totaks, Direct Debt (tess Sinking Funds) | 34,098 | 11,543 | 136,596 | 102,088 | 2,184,571 | 2,192,134 | 20\%, 80 | \%10,703 | 551,947 | 633,383 | 991 | 400 | 6,188,954 |
| Indirect Debt (less Sinking Funds)- |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Gudranteed bonde or debentures. | - | $\sqsubset$ | 1,308 | 5,131 | - | 2,439 | 2,462 | - | - | - | - | - | 11.840 |
| Less minking funds......................... | - | - | 369 | - | - | - | - | - | - | - | - | - | 369 |
| Net gaaranteed bonds or debenturea......... | - | - | 939 | 5,131 | $\rightarrow$ | 2,439 | 2,462 | - | - | - | - | - | 10,971 |
| Guaranteed bank loans | - | - | - | - | - | - | - | - | 21 | - | - | - | 21 |
| Totals, Indirect Deht (less Sinking Frunds). | 一 | - | 939 | 5,131 | - | 2,439 | 2,462 | - | 21 | - | - | - | 10,982 |
| Grand Totals. | \$4,098 | 11,648 | 137, 838 | 107,219 | 2,184,571 | 2,194,573 | 233,451 | 210,703 | 551,908 | 532,883 | 991 | 480 | 6,189,946 |

${ }^{1}$ Includes $\$ 49,775$ debentures of the Montreal Transportation Commiesion guaranteed by the City of Montreal. Financing Corporation; see iootnote?, Table 23.
${ }^{2}$ Includee debentures sold to the Alberta Munioipal

## CHAPTER XXIV.-TRENDS IN ECONOMIC AGGREGATES*

## CONSPECTUS

|  | Page |  | Page |
| :---: | :---: | :---: | :---: |
| Srction 1. National Accounts. | 1088 | Subsection 1. The Eronomic Council of Canada. $\qquad$ |  |
| Section 2. Indugtry Production Tremds... | 1080 |  | 1101 |
| Sectien 3. Aggrigatr Prodiditivity Trends | 1086 | Subsection 2. The Atlantic Development |  |
| Section 4. Canadian Balance of International Pathentr. | 1089 | Board.... | 1111 |
| Suction 5. Canada'b International Investment Pobition. $\qquad$ | 1095 | Subsection 3. The Municipal Development and Loan Board | 1114 |
| Bection 6. Government Economic Planting Agencies..... ....... ...... ..... | 1101 | Subsection 4. Provincial Government Economic Planning Agenciea....... | 1115 |

The interpretation of the symbols used in the tables throughout the Year Book will be found on $p$. viii of this volume.

In this Chapter various statistical statemente and studies are presented in which broad areas of Canadian economic activity are covered in a comprehensive but summary form. These integrated aggregative economic accounts provide an interrelated framework for economic analysis and the observation of changes in the functioning of the Canadian economy and its structure and in economic and financial relationships with other countries.

## Section 1.-National Accounts

The national accounts constitute a set of accounting summaries for the nation as a whole and portray economic activity in terms of transactions taking place between different sections of the economy. By combining and summarizing these operations into their various classes, information may be obtained on the functioning of the economy which is of particular interest to governments concerned with problems of full employment, taxation and prices, and to business men concerned with programs of investment and marketing.

This measurement of the nation's output is in terms of established market prices; hence it is necessary to keep in mind that the value of the nation's production may change because of price variations as well as through increase or decrease in volume of output.

Data are available showing volume changes in gross national expenditure in addition to the value figures. Gross national expenditure is shown in Table 4 in constant dollars (i.e., in terms of 1949 prices). Because the gross national expenditure equals the gross national product, these data also reflect volume changes in the production of goods and services as measured by the gross national product. In the other tables in which the data are expressed in current dollars, year-to-year changes must be considered in relation to price changes over the period.

[^350]The tables on pp. 1075-1080 cover the more important aspects of the national income analysis in annual terms. Definitions are as follows:-

National Income.-Net national income at factor cost measures the current earninga of Canadian factors of production (i.e., land, labour, capital) from productive activity. It includes wages and salaries, profits, interest, net rent and net income of farm and nonfarm unincorporated business.

Gross National Product.-Gross national product, by totalling all costs arising in production, mesaures the market value of all final goods and services produced in the current period by Canadian factors of production. It is equal to national income plus net indirect taxes (indirect taxes less subsidies), plus capital consumption allowances and miscellaneous valuation adjustments.

Personal Income.-Personal income is the sum of current receipts of income whether or not these receipts represent earnings from production. It includes transfer payments from government (such as family allowances, unemployment insurance benefits and war service gratuities) in addition to wages and salaries, net income of unincorporated business, interest and dividends and net rental income of persons. It does not include undistributed profits of corporations and other elements of the national income not paid out to persons.

Gross National Expenditure.-Gross national expenditure measures the same aggregate as gross national product, namely, total production of final goods and services at market prices, by tracing the disposition of production through final sales to persons, to governments, to business on capital account (including changes in inventories) and to nonresidents (exports). Imports of goods and services, including net payments of interest and dividends to non-residents, are deducted since the purpose is to measure only Canadian production.

## Economic Activity in 1965

The momentum that has carried the gross national product (GNP) to auccessive new high levels since 1961 continued through 1965, when a 9.7 -p.e. increase raised the current dollar value to $\$ 52,000,000,000$. As the expansion continued and the economy moved close to a full utilization of resources, price increases were more evident than in the preceding years and a 3-p.c. rise in price levels reduced the gain to 6.6 p.c. in real terms. Excluding agricultural income from GNP, the increase in 1965 of 9.6 p.c. was somewhat less than the 10.2-p.c. increase between 1963 and 1964.

During the first quarter of the year the rate of increase was unusually rapid, as a surge in inventory accumulation. following the previous quarter's disruption of supplies caused by strikes in the automobile industry, was coupled with increased demands in all other sectors with the exception of housing. The rate of growth eased in the following quarters but throughout the year all areas of demand continued strong with the exception of new housing construction where most of the recorded increase in value reflected increased prices. In the final quarter GNP gained 2 p.c. to end the year at $\$ 53,800,000,000$.

During 1965 as a whole there were gains over a wide range of economic activity. The scene was perhaps dominated by the atrength of investment in non-residential construction and machinery and equipment, which were 17 p.c. above 1964 levels, with particular emphasis in the manufacturing industry and electric power, gas and water utilities. The capacity of the construction industry was atrained during the year, for, in addition to business construction, government outlays on new fixed capital rose steeply; the latter are included in over-all government expenditure on goods and services which rose by 11 p.c., the main impetus coming from the provincial and municipal governmenta. Personal consumption once again accounted for the major part of the gain in GNP, as the increase of 8 p.c., buoyed by rapidly rising labour income and expansion of credit purchasing, contributed $\$ 2,400,000,000$ toward the total increase in GNP of $\$ 4,600,000,000$. The
demand for goods and services increased at the same rate, although, within goods, the relative strengt 4 of demand for durable goods was more pronounced, particularly for automobiles where sales continued to increase strongly for the fourth successive year.

Business investment in inventories, although easing off in each quarter, totalled $\$ 905,000,000$ for the year, appreciably higher than in 1964. However, the level of inventories and the over-all rate of accumulation when viewed against the levels of production did not appear to be unduly high.

The pressures on Canadian production of the vigorous expansion in domestic demand were somewhat moderated as part of the demand was met by a sharp increase in imports, particularly toward the latter part of the year. The deficit on current account transactions with non-residents increased to $\$ 1,100,000,000$ in 1965 from $\$ 400,000,000$, mainly as a result of a substantially lower growth in exports of goods combined with continued large increases in merchandise imports. Exports of goods continued to rise although at a less rapid pace than in 1964; the export gains were notable, however (allowing for the substantial decline in wheat sales), particularly in non-ferrous metals and automobiles and parts.

In response to the high level of demand, labour income rose rapidly throughout the year to average 11 p.c. above 1964, an increase attributable to expanded employment opportunities and to wage-rate increases in excess of those experienced in the previous year. Profits moved rather unevenly through the year to a new high, 8 p.c. above 1964; however, the fractional declines in the first and fourth quarters were in contrast to the uninterrupted gains recorded from the beginning of 1962.

As already noted, some acceleration of price increases was observed in 1965, as well as a broadening of the areas over which these increases were being experienced. In the consumer field, price increases in food and services were most significant, and price increases in construction appeared to be appreciably higher in non-residential work, At the same time, certain reductions should be noted in the selling prices of the motor vehicle industry, petroleum refineries and sugar refineries.

The robustness of the Canadian economy has gone hand in hand with increasing employment and gains in productivity, and against a background of economic expansion in the United States unprecedented in the postwar period.

Components of Demand.-Total consumer expenditure on goods and services reached $\$ 32,100,000,000$ in 1965 , an increase of 8 p.c. over its 1964 value. The purchasing power to sustain this level came primarily from an 11-p.c. increase in labour income, while consumer debt outstanding continued to expand at about the same rate as in previous years. A 2-p.c. rise in consumer prices cut into the real gains for the period. The price rise was most pronounced in the service sector which registered an almost 3-p.c. increase for the year. A like increase in food prices was largely responsible for the advance in nondurable goods prices. New and used car prices declined about 1 p.c. while total durable goods prices declined fractionally.

The 1965 advance in total consumer expenditure, which was at a rate fractionally stronger than in the preceding year, was shared by all components. Outlays on both goods and services increased 8 p.c., the increase on services being a continuation of the pronounced rate of advance recorded in 1964. The value of durable goods purchased increased steadily as prices edged downward. Sales of new and used cars rose over 14 p.c. compared with the 12-p.c. gain shown in strike-affected 1964. Most of the major components of durable goods increased, particularly furniture and appliances and radios. Purchases of non-durable goods rose more than 7 p.c., with notable increases in several of the components -food expenditures increased almost 6 p.c., clothing $6 \frac{1}{2}$ p.c., and tobacco and alcoholic beverages 8 p.c. and 9 p.c., respectively.

Capital expenditures in 1965 were $\$ 10,400,000,000$, an amount $14 \frac{3}{2}$ p.c. higher than in 1964. Non-residential construction and machinery and equipment outlays rose 18 p.c. and 17 p.c., respectively, and housing rose less sharply, by 5 p.c. The pace of investment in business plant and equipment quickened noticeably in the second half of the year.

The atrength in demand in 1965 for new capital spread to all major industrial groupings but was particularly pronounced in industries manufacturing chemicals and transportation equipment, in the paper and allied industries, in electric power and transportation utilities, and in financial and commercial services, the latter increase being partly related to preparations for Expo 67. New construction project outlays ran about one third higher in 1965 in manufacturing, electric power, gas and water utilities and in the private commercial and institutional service industries, and increased purchases of machinery and equipment were particularly heavy for railways and urban transit systems. During the past two years the distribution of capital spending has shifted to give greater emphasis to manufacturing than was evident at the commencement of the current expansion; in 1965, manufacturers' outlays were double those of 1961 .

The value of residential building amounted to $\$ 2,100,000,000$, the gain of 5 p.c. over 1964 largely representing increased prices. Housing expenditures rose $2 \frac{1}{2}$ p.c. in the first half of 1965 over the latter half of 1964 but changed little in the second half of 1965 when the tightened supply of mortgage money contributed to a slowing down in the number of apartments started. Housing starts in 1965 were virtually unchanged at 166,600 and completions increased slightly to 153,000 ; the number of dwellings under construction was higher and stood at a record 120,000 at the year-end. The housing market was assisted by CMHC direct loans which helped to offset the decline in both conventional and NHA lending by institutions. Mortgage approvals in the last quarter of 1965 were considerably lower than the previous year's level. During 1965, as a result of the heavy construction program, pressures developed on construction wage and material costs. Costs rose by about 6 p.c. compared with an increase of about 4 p.e. in 1964.

Business capital spending plans for 1966, published in Private and Public Investment in Canada, Oullook 1966, indicate a substantial increase in investment; thus the sector is expected to add to domestic demand and cost pressures. However, some Federal Government budgetary measures, announced in late March, were aimed at restraining the expenditures on capital.

The tempo of investment in business inventories accelerated in 1965, amounting to $\$ 905,000,000$ compared with $\$ 516,000,000$ in 1964. Although this was by far the largest stock accumulation during the current economic expansion, the accumulation in relation to the levels of production does not appear to be unduly high. Investment in manufacturing and retail trade was the major force of expansion, contributing about 50 p.c. and 28 p.c., reapectively, of the total accumulation. The quarterly pattern revealed that, after a substantial accumulation in the first quarter of the year, there was some slowing down in the rate of accumulation in the remainder of the year. The substantial build-up in the first quarter reflected, in part, unusually heavy restocking of automobiles in dealers' hands as a result of a sizable involuntary depletion in the previous quarter caused by strikes in the automobile industry.

The strongest influence in the 1965 accumulation was provided by the investment in manufacturers' durable goods, with significant increases in the stocks of primary metal, metal fabricating, machinery, transportation, and electrical goods-producing industries. Among non-durables, the increase in chemicals was notable but an offsetting movement in the stocks of other non-durable goods-producing industries left on balance a very small accumulation. The ratio of stock-to-shipments throughout the year remained below the average of the current expansion and slipped noticeably at the year-end. Almost all the increase in the rate of accumulation in the stocks of wholesale trade was accounted for by the durable lines, particularly in the industrial and transportation machinery and equipment group. The movements in the non-durables were mixed, leaving a very small accurmulation. The stock-to-sales ratio for the year as a whole was below the average of the current expansion. A considerable amount of accumulation was concentrated in the holdings of retail traders. Modest increases in stocks were registered in non-durable goods, but there was a sharp accumulation in durable goods, concentrated mainly in the hands of motor vehicle dealers. The atock-to-sales ratio throughout the year was above the average of the current expansion.

During 1965 the deficit in Canada's external account jumped to $\$ 1,141,000,000$ from $\$ 412,000,000$ in 1964 (on a National Accounts basis). The change of $\$ 729,000,000$ resulted from a fall of $\$ 599,000,000$ in the surplus on merchandise trade as the increased demand for imports outpaced the growth in export sales, and a further deterioration of $\$ 130,000,000$ in non-merchandise trade; about 80 p.c. of the latter can be ascribed to higher defcits in the interest and dividend account and the freight and shipping account.

Export gains were made in live animals, crude materials such as metal ores, fabricated materials including pulp and paper and metals, and such products as machinery and transportation (cars, trucks and parts) and communication equipment. After showing little gain in the first part of the year compared with the latter half of 1964, exports climbed 8 p.c. in the second half of the year.

Domestic exports (on a Trade of Canada basis) were $\$ 429,000,000$ higher in 1965 than in 1964, a gain of $\$ 568,000,000$ in United States markets offsetting declines of $\$ 25,000,000$ and $\$ 114,000,000$ in United Kingdom and other markets. Fabricated materials and endproducts contributed 43 p.c. and 36 p.c. of the gains made in the United States. A drop of $\$ 214,000,000$ in the category "food, feed, beverages and tobacco" accounted for the over-all decline in exports to markets outside the United States and the United Kingdom. Whereas shipments of wheat and flour under the first major contract with the Soviet Union were important throughout the first half of 1964, shipments on the second large contract began late in the third quarter of 1965.

Import statistics indicate strength in Canadian demand for imported fabricated chemicals, metal and metal products, machinery, transportation and communication equipment, and other equipment such as laboratory requirements and computers.

The Government Sector.-Total revenues of governments combined (excluding intergovernmental transfers) increased by $\$ 1,676,000,000$ to $\$ 16,373,000,000$, an $11 \frac{1}{\frac{1}{2}}$-p.c. advance over the 1964 total of $\$ 14,697,000,000$. Expenditures increased less sharply, by $9 \frac{1}{2}$ p.c. above the 1964 total, to $\$ 16,127,000,000$, resulting in a surplus of $\$ 246,000,000$ (on a National Accounts basiz) compared to a small deficit of $\$ 21,000,000$ in 1964 . The improvement in the over-all position was entirely at the federal level; because the increase in revenues was at a greater rate than the increase in expenditures, the surplus rose to $\$ 568,000,000$ from $\$ 296,000,000$ in 1964 , making this the second consecutive year to record a federal surplus. The deficit at the provincial-municipal level of $\$ 322,000,000$ was little changed from 1964.

All components of government revenue increased over the year, reflecting the continued buoyancy and expansion of activity in the economy. The largest increases occurred in revenues from indirect taxes and personal direct taxes.

Total indirect tax revenue rose by approximately 12 p.c., with the Federal Government and the provincial-municipal governments sharing almost equally in the absolute increase. The major part of the gain at the federal level was in excise taxes, which increased 19 p.c. compared with 14 p.c. for all federal indirect taxes; this was in part a reflection of the final stage of the imposition of the higher excise tax on production equipment and building materials. Provincial revenues from gasoline and sales taxes rose by 11 p.c. and 16 p.c., respectively, partially caused by some upward revision in rates. The gain in property taxes, due to both increased rates and bases, accounted for most of the rise at the municipal level. Total corporate and personal direct taxes reached a level of $\$ 6,076,000,000$, an increase of 12 p.c. over 1964. Reflecting the sustained improvement in employment conditions and rising incomes, total revenue from federal and provincial personal income taxes was $13 \frac{1}{2}$ p.c. higher than in 1964 , even after allowing for a reduction of about 10 p.c. in the federal personal income tax rates from July 1, 1965. The provincial share of personal income taxes increased markedly during the year, a reflection of the increased abatement under the terms of the Federal-Provincial Fiscal Arrangements Act.

Total expenditures of all levels of government (excluding intergovernmental transfers) advanced by approximately 10 p.c. or $\$ 1,400,000,000$ in 1965 , most of the gain occurring at the provincial-municipal level. Outlays on goods and services, which increased by 11
p.c., were strongly reinforced by a 29 -p.c. or $\$ 533,000,000$-increase in capital expenditure, with four fifths of the increase occurring at the provincial-musicipal level. Provincialmunicipal expenditures on goods and services rose sharply by approximately 13 p.c.; federal outlays on goods and services rose by over 7 p.c., accounted for by an increase of almost 14 p.c. in non-defence goods and services and a decrease of 1 p.c. in defence goods and services. Transfer payments to persons (excluding interest on the public debt) showed an increase of 9 p.c. The Federal Government recorded an increase of 3 p.c. but the increase at the provincial-municipal level was 15 p.c. The substantial increase by the provincial-municipal governments was caused by larger grants to hospitals and educational institutions.

Price Movements.-Over the past two years there was a moderate rise in the rate of over-all price increase. With prices advancing by nearly 3 p.c. between 1964 and 1965, the increase of 9.7 p.c. in the value of GNP was reduced to a gain of 6.6 p.c. when expressed in real terms.

In 1965 the price component of personal expenditure advanced by 2 p.c. compared with 1.6 p.c. in the preceding year. Prices associated with business gross fixed capital formation exhibited approximately the same rate of increase in both years, while prices for both exports and imports showed a smaller increase in 1965 than in 1964. Within personal expenditure, the components showed somewhat diverse movements. Durable goods prices declined fractionally compared with a 1-p.c. decline in 1964, the prices of new automobiles and appliances decreased by approximately 0.5 p.c. and the prices of furniture increased by 2 p.c. Food prices, increasing by about $2 \frac{1}{2}$ p.c. largely as the result of much higher meat prices brought about by short supply conditions in the United States, dominated the movement of non-durable goods prices. Prices of non-food commodities continued to increase by slightly less than 1 p.c. Prices of services rose by close to 3 p.c., reflecting advances of $3 \frac{1}{2}$ p.c. or more in all major components other than rents and communicationrelated services, both of which increased by about 0.5 p.c.

Prices associated with residential building showed somewhat lower increases than in 1964. This appeared to be associated with building material prices; the price index of lumber and its products increased by over 8 p.c. in 1964 but only 5 p.c. in 1965 and the prices of roofing materials increased by about 6 p.c. in 1964 but fell by 3 p.c. in 1965 . The labour component of both the residential and non-residential price indexes increased by somewhat more in 1965 than the $4 \frac{1}{2}$-p.c. increase recorded in 1964. Shifting expenditure patterns affected machinery and equipment prices in both years; had a fixed pattern been used to estimate price changes, the increases in the prices of machinery and equipment would have been 3.3 p.c. in 1964 and 2.9 p.c. in 1965.

Within merchandise exports, price changes were somewhat diverse. The drop in the price of wheat early in 1965 was largely responsible for a $1 \frac{1}{2}$-p.c. price decline in the food, feed, beverages and tobacco group. Both the crude materials, inedible and the endproducts, inedible groups increased by a little over 1 p.c. and the fabricated materials, inedible group gained 2 p.c. Within the latter group, the price of newsprint showed only a fractional change, while certain metal prices, responding to world market conditions, increased aignificantly.

The movement of merchandise import prices was again dominated by changes in the price of augar, which declined by more than 50 p.c. relative to 1964 . The fractional increase in the over-all import price index resulted from moderate increases in the crude materials, inedible and the end-products, inedible groups, an increase of approximately 3 p.c. in the fabricated materials group, and a decrease of over 16 p.c. in the food, feed, beverages and tobacco group.

Income Flows.-Wages, salaries and supplementary labour income totalled $\$ 26,000,000,000$ in 1965 and was 11 p.e. higher than in 1964. Labour income originating in the goods-producing industries advanced more rapidly than the service-producing group. The rise in labour income resulted in part from the continued sharp increase in employment in non-agricultural industries, where expanded job opportunities more than
absorbed new entries to the labour force, and the number of unemployed fell. Numbers in the labour force as a proportion of the population 14 years of age or over rose in 1965 to a level not achieved since the late 1940s. In addition to the increased numbers employed, there was an appreciable advance in average weekly wages and salaries.

Wages and salaries in the goods-producing industries rose $12 \frac{1}{2}$ p.c. with the largest gain (24 p.c.) occurring in construction where about two thirds of the increase resulted from a higher volume of labour input. The mining industry advanced 13 p.c. and the forestry and manufacturing groups each increased about $10 \frac{1}{2}$ p.c. Gains in mining, manufacturing and construction wage and salary payments were the largest recorded in the past decade. Wages and salaries in the service-producing industries were about $10 \frac{1}{2}$ p.c. above the 1964 total. The finance and service industries increased about $12 \frac{1}{2}$ p.c. and wages and salaries in trade advanced $10 \frac{1}{2}$ p.c. Somewhat smaller increases were recorded in the transportation, storage and communication group, $8 \frac{2}{2}$ p.c., and in government non-military wages and salaries, $7 \frac{1}{2}$ p.c.

Corporation profits (before taxes and before dividends paid to non-residents) reached a record level of $\$ 5,200,000,000$ in 1965 and were 8 p.c. higher than in 1964. Starting the year with a moderate first quarter (about level with the exceptionally high fourth quarter of 1904), profits continued to climb through the second and third quarters before levelling off in the fourth. Profits in the manufacturing group rose about 7 p.c. over 1964, genersl strength being evident in most industries. Of particular significance were the increases in food and beverages ( 8 p.c.) and metals ( 15 p.c.), the latter reflecting the return to more stable production conditions in the transportation equipment industry. These movements were partly offiset by increased costs in the wood and paper industries, the profits of each of which deelined 15 p.c.

There was a 9 -p.c. rise in the profits of the transportation, storage and communication industry. The continued strength of consumer demand contributed to the $\mathbf{1 5 - p}$.c. increase in retail trade profits, and wholesale trade profits showed an upward movement of 10 p.c. The performance of banks and the improved revenues of insurance carriers resulted in a 9-p.c. advance in the finance, insurance and real estate group. The profits of service industries continued to increase, moving up 22 p.c. in 1965; this rate was second only to that of 1962 , the first full year of the current expansion. The marginal decline in the profits of the mining, quarrying and oil wells group was attributable to the irregularly high level of foreign dividend receipts in 1964.

Rents, interest and miscellaneous investment income increased by 9 p.c. over 1964, one of the larger increases in recent years. This item was marked by an increase in the government component, as the profits of government business enterprises and other investment income showed a notable rise. The increase was largest at the provincial level. Among the other investment income items, the rental income of persons showed mixed movements; residential rents declined, reflecting rising expenses, but the rental income of farms increased sharply.

Benefiting from strong second and third quarters, net income of non-farm uniacorporated business in 1965 reached a level of $\$ 2,877,000,000,6$ p.c. above the 1964 figure. The largest gain, $7 \frac{1}{3}$ p.c., was in service industries which contributed more than half of the total increase in the net income of non-farm unincorporated business.

Accrued net income of farm operators from farm production in 1965 was $\$ 1,645,000,000$, 12 p.c. higher than in 1964 but slightly lower than in the bumper-crop year 1963. Farm cash receipts, the largest component of farm income, increased 8 p.c. and farm operating expenses 5 p.e. over 1964; both items attained record levels. A large part of the increase in the accrued net income of farm operators can be attributed to considerably higher grain production. The value of crop production in 1965 was estimated at $\$ 1,301,000,000$, the third highest on record and close to 15 p.c. above 1964. On the other hand, value of grain marketings in 1965 was smaller than in 1964. Reflecting considerably higher receipts from sales of cattle, calves and hogs, livestock production increased 9 p.c. above the 1964 level. Sales of potatoes, dairy products and egga also increased.

## Economic Activity in the First Nine Months of 1966

For the first nine months of 1966 , gross national product advanced 11.3 p.c. over the same period in 1965. Although this rate of advance in the value of GNP was higher than the 9.7 p.c. recorded in the full year 1965 , in real terms the increases were 6.6 p.c. for both periods because of some acceleration in the rate of price rise. Within the year 1966, quarter-to-quarter increases in GNP became successively smaller, ranging from an unusually strong first-quarter advance of 4.5 p.c. to a third-quarter advance of 0.7 p.c.

In the nine-month comparison, final demand increased at a slightly greater rate than did the value of production and, as a consequence, there was an advance in imports of over 14 p.c. The strength in demand was broadly based, extending to all categories other than new housing, which increased only $4 \frac{1}{2}$ p.c. In contrast, business expenditures on plant and equipment rose 19 p.c., exports 17 p.c., government expenditures 15 p.c. and consumer spending 9 p.c.

Advances in the income components were more diverse; labour income increased 13 p.c. but profits showed virtually no change. Accrued net farm income rose 43 p.c. but net income of the unincorporated business sector increased only 3 p.c.
1.-Gross National Product, in Current and Constant (1949) Dollars, 1837-65

Note.-Comparable figures for 1927-36 are given in the 1965 Year Book, p. 1009.

| Year | Millions of Current Dollars | $\begin{gathered} \text { Millions of } \\ \text { Constant (1949) } \\ \text { Dollars } \end{gathered}$ | Year | Millions of Current Dollars | Millions of Constant Dollars |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1937. | 5,257 | 8,820 | 1952. | 23,995 | 20,027 |
| 1938. | 5,278 | 8,871 | 1953. | 25,020 | 20,784 |
| 1939. | 5,636 | 9,536 | 1954. | 24, 87 I | 20,186 |
| 1940... | 6,743 | 10,911 | 1955. | 27,132 | 21,920 |
| 1941. | 8,328 | 12,480 | 1956 | 30,585 | 23,811 |
| 1942. | 10,327 | 14,816 |  |  |  |
| 1943. | 11,088 | 15,357 | 1958... | 32,894 | 24,397 |
| 1944. | 11,850 | 15,927 | 1959. | 34, 915 | 25,242 |
| 1945. | 11, 835 | 15,552 | 1960. | 36, 287 | 25,849 |
|  | 11.850 | 15,251 | 1961. | 37,471 | 26,515 |
| 1947. | 13,165 | 15,446 |  |  |  |
| 1948... | 15,120 | 15,735 | 1962-... | 40,575 | 28,287 |
| 1949. | 16,343 | 16,343 | 1963r-.. | 43,424 | 29,740 |
| 1950 | 18,006 | 17,471 | 19642 | 47,403 | 31,663 |
| 1951. | 21,170 | 18,547 | 1965. | 51,996 | 33,770 |

## 2.-National Income and Gross National Product, by Component, 1961-65

Nort.-Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are giver in the 1957-58 Year Book, p. 1122, and for later years in succeecing editions.
(Miltions of dollars)

| Item | 1961 | 1962 e | 1963 r | 1964 r | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Wages, salaries and supplementary labour income | 18,898 | 20,233 | 21,547 | 23,433 | 26,033 |
| Military pay and allowances. | 550 | ${ }_{580}$ | 598 | 583 | 587 |
| Corporation profits before tazes | 2,841 | 3,235 | 3,574 | 4, 10 B | 4,448 |
| Rent, interest and miscellaneous inveatment incom | 2,670 | 2,832 | 3,078 | 3,262 | 3.554 |
| Accrued det income of farm operators from farm production ${ }^{2}$. | 1,008 | 1,498 | 1,72! | 1,464 | 1,645 |
| Net income of non-farm unincorporated business ${ }^{2}$ | 2,274 | 2,401 | 2,551 | 2,720 | 2,877 |
| Inventory valustion adjustment | -89 | -130 | $-200$ | -131 | -325 |
| Net National Imcome at Factor Cost | 28,250 | 30,653 | 32,869 | 35,437 | 38,819 |
| Indirect tayes less subsidies. <br> Capital consumption allowances and miscelianeous valuation adjustments. <br> Residual error of estimate. | 4,606 | 5,293 | 5,600 | 6,372 | 7,172 |
|  | 4,540 | 4,892 | 5,198 | 5,600 | 6,110 |
|  | -15 | -263 | -243 | -6 | -105 |
| 5 | 87,472 | 40,575 | 43,474 | 47,403 | 51,996 |
| ${ }^{1}$ Excludes dividenda paid to non-residents. net income of independent professional practitioners. | 2 lucludes changes in farm inventories. |  |  |  | Includ |

## 8.-Gross Natlonal Expenditure, 1961-65

Nore,-Comparable figurea for the years 1939, 1944, 1946, 1950 and 1953 are given in the $1957-58$ Year Book, p. 1124, and for later years in succeeding editione.
(Millions of dollars)

| Item | 1961 | 1962 r | 1963 | 1984: | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Peraonsl expenditure on consumer goods and services. | 24,466 | 25,926 | 27,487 | 29,666 | 32,068 |
| Government expenditure on goods and services. | 7,236 | 7,717 | 8,075 | 8,654 | 9,596 |
| Current expenditure........................... | 5,699 | 6,968 | 8,275 | 6,818 | 7,8\%2 |
| Gross fixed capital formation. | 1,587 | 1,755 | 1,808 | 1,841 | 8,374 |
| Business gross fired capital tormation. | 6,635 | 6,980 | 7,591 | 9,103 | 10,424 |
| New residential construction. | 1,458 | 1,577 | 1.707 | 2,021 | 2,124 |
| New non-residential construetion............................ | 8,683 | 8,688 | 8,895 | 3,558 | 3,955 |
| New machinery and equipment........................... | 8,294 | \$,745 | 3,049 | 3,724 | 4,348 |
| Value of physical change in inventories...................... Nonfarm business inventories..................... | 30 489 | 532 510 | 535 | 388 516 | 948 906 |
| Farm inventories and grain in commercial channels. | -609 | 20\% | 295 | $-150$ | 48 |
| Export of goods and services............. <br> Deduct: Imports of goods and services | 7,631 $-8,542$ | 8,259 $-9,082$ | 9,111 $-9,618$ | 10,507 $-10,919$ | 11,156 $-12,297$ |
| Residual error of estimate.. | 15 | 263 | 243 | ${ }^{6}$ | 106 |
| Gross National Expenditure at Market Prices... | 37,471 | 40,575 | 43,474 | 47,403 | 51,998 |

## 4.-Gross National Expenditure in Constant (1949) Dollars, 1961-65

Nore.-Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1857-58 Year Book, p. 1124, and for later years in succeeding editions.
(Millions of dollars)

| Item | 1961 | 1962r | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Personal expenditure on consumer goods and services....... | 18,508 | 19,364 | 20,235 | 21,506 | 22,800 |
| Government expenditure on goods and services. | 4,393 | 4,561 | 4,588 | 4,771 | 5,069 |
| Current erpenditure. | 3,887 | 3,274 | 9,3/7 | 3,478 | 8,551 |
| Gross fixed cspital formation | 1,175 | 1,298 | 1,879 | 1,308 | 1,589 |
| Adjusting entry... | -8 | -12 | -8 | -10 | -8I |
| Business gross fired capital formation. | 4,272 | 4,381 | 4,615 | 5,305 | 5,820 |
| New residential construction............................... | 941 | 989 | 1,088 | 1,168 | 1, 184 |
| New non-residential construction | 1,688 | 1,698 | 1,698 1,882 | 1,987 |  |
| New machinery and equipment, Adjusting entry ................ | 1,627 6 | 1,788 | 1,882 | 2,815 | \$, 819 |
| Value of physical change in inventaries. | 26 | 462 | 464 | 322 | 854 |
| Nonfarm business inventories........ | 550 | 237 | 198 | \$99 | 706 |
| Farm inventories and grain in commercial chan | -484 | 258 | 325 | -158 | 77 |
| Adjusting entry...................... | 160 | -5S | -54 | 88 | 7 |
| Exports of goods and servites. | 6,224 | 6,534 | 7,118 | 8,051 | 8,452 |
| Deduct: Imports of goods and services...................... | $-6.845$ | -6,992 | -7,188 | $-8,064$ | -9,042 |
| Residual error of estimate Adjusting entry. | -74 | 182 -185 | 185 -257 | 4 -232 | 68 -251 |
| Gross Natlonal Expenditure in Constant (1949) Dollars. | 26,515 | 23,287 | 23,740 | 31,663 | 33,76 |
| Index of gross national expenditure (1949-100). | 182.2 | 173.1 | 182.0 | 193.7 | 206.6 |

## 5.-Year-to-Year Percentage Change in Gross National Expenditure, 1961-65

| Item | 1961 | 1962 | 1063 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | p.o. | p.c. | p.c. | p.c. | p.c. |
| Personal Expenditare on Consumer Goods and ServiceeValue. | 3.9 | 6.0 | 6.0 | 7.9 | 8.1 |
| Volume.............................................................. | 3.1 | 4.6 | 4.5 | 6.3 | 6.0 |
| Price... | 0.8 | 1.3 | 1.4 | 1.6 | 2.0 |
| Government Expenditure on Goods and ServiessValue. | 6.9 | 6.6 | 4.6 | 7.2 | 10.9 |
| Volume....................................................... | 4.7 | 8.8 | 0.5 | 4.0 | 6.2 |
| Price....................................... . . . . . . . . . . . . . . | 2.1 | 2.7 | 4.1 | 3.1 | 4.4 |
| Current Erpenditure- | 9.6 | 4.6 | 5.2 | 8.6 | 6.0 |
| Volume. | 5.8 | 1.5 | 1.4 | 4.8 | 2.0 |
| Prico... | 4.2 | 3.1 | 3.8 | 3.8 | 3.9 |
| Gross Fired Capital Formation- | -2.1 | 14.2 | 2.7 | 2.2 | 29.0 |
| Volume. | 3.1 | 10.6 | -1.6 | 1.8 | 18.2 |
| Price.. | -5.0 | 3.3 | 4.3 | 0.3 | 9.2 |
| Buriness Gross Fised Capital Formstion- |  |  |  |  |  |
| Value........................... | -0.9 | 4.8 | 9.1 5.8 | 19.9 14.9 | 14.5 9.7 |
| Price......................... | 0.8 | 2.8 | 3.1 | 4.4 | 4.3 |
| New Reaidential Construction- |  |  |  |  |  |
| Value.............. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 1.0 | 8.3 5.0 | 8.2 | 18.4 12.3 | 5.1 0.2 |
| Price., | 0.6 | 2.9 | 3.4 | 5.5 | 4.9 |
| New Not-reaidential ConstructionValue. | 4.1 | -1.7 | 7.5 | 18,4 | 17.8 |
| Volume. | 8.7 | -3.8 | 4.0 | 13.5 | 10.9 |
| Price. | 0.4 | 2.2 | 3.4 | 4.4 | 6.1 |
| Now Machinery and EquipmentValue. | -6.7 | 10.1 | 11.1 | 22.1 | 16.7 |
| Volume....... | -8.0 | 6.8 | 8.3 | 17.7 | 13.7 |
| Price.. | 1.5 | 3.0 | 2.6 | 3.8 | 2.6 |
| Exports of Goods and ServicesValue. | 8.9 | 8.2 | 10.3 | 15.3 | 6.2 |
| Volume............................................................ | 7.2 | 8.0 | 1.0 | 18.1 | 5.0 |
| Price. | 1.6 | 3.1 | 1.2 | 1.9 | 1.2 |
| Imports of Goods and Services- |  |  |  |  |  |
| Value...... | 4.5 | 6.3 | 5.9 | 13.5 | 12.6 |
| Volume | 1.4 | 2.1 | 2.9 | 12.2 | 12.1 |
| Price.. | 3.0 | 4.1 | 2.9 | 1.2 | 0.4 |
| Gross National Irpendlture at Market PricesValue. | 3.3 | 8.3 | 7.0 | 9.2 | 9.7 |
| Yelume............... | 2.6 | 6.7 | 5.1 | 6.5 | 6.8 |
| Price... | 0.7 | 1.5 | 1.8 | 2.5 | 2.3 |

## G.-Personal Income, by Source and by Province, 1961-63

Norx.-Comparable figures for the years 1939, 1944, 1948, 1950 and 1953 are given in the 1957-58 Year Book, p. 1225 , and for later years in sucoeeding editions.
(Millions of dollars)

| Item | 1961 | 1962 r | 1963 \% | 1964: | 1985 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Source |  |  |  |  |  |
| Wages, talaries and aupplementary labour income. <br> Deduct: Employer and employee contributions to social | 18,996 | 20,233 | 21,547 | 23,433 | 26,033 |
| Militaryance and government pension funds.................. | -787 | -812 | $-852$ | -912 | -859 |
| Metincome received by farm............................... | 550 | 586 | 598 | 583 | 587 |
| Net income received by farm operatorg from farm production | 978 2.274 | 1,490 | 1,582 | 1,358 ${ }_{2}, 720$ | 1,689 |
| Intertent, dividends and neti rental income of persona.......... | 2,274 3.030 | 2,401 3,305 | 3,616 | 3,799 | 1,877 4,129 |
|  | $\begin{array}{r}3,60 \\ 3,441 \\ \hline 10\end{array}$ | 3.305 3.725 44 | 3,016 3,848 44 | 4, 133 414 | 4,120 4,502 |
| Totals, Personal Income. | 28,520 | 24,972 | 32,934 | 85, 15\% | 38,902 |

## 6.--Personal Income, by Source and by Province, 1961-65-concluded

| Item | 1961 | 1962 r | 1963 r | 1864 ${ }^{7}$ | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Province |  |  |  |  |  |
| Newfoundland. | 428 | 449 | 484 | 523 | 584 |
| Prince Edward Island. | 101 | 111 | 118 | 132 | 148 |
| Nova Scotia. | 882 | 934 | 981 | 1,041 | 1.130 |
| New Brunswiek | ${ }^{636}$ | 674 | 708 | 777 | 857 |
| Quebec | 7.272 | 7,803 | 8,254 | 8,980 | 9,926 |
| Ontario. | 11,480 | 12,252 | 13.099 | 14,057 | 15,450 |
| Manitoba. | 1,395 | 1,578 | 1,599 | 1,725 | 1,846 |
| Saskstehewan | 1,130 | 1,576 | 1,742 | 1.587 | 1,870 |
| British Colsmbis | 2,953 | 3,139 | 8, 366 | -3, 628 | 2,867 |
| Yukon and Northwest Territories. | 49 | 50 | ${ }^{53}$ | 57 |  |
| Foreign countries ${ }^{\text {l }}$. | 61 | 73 | 75 | 75 | 84 |

${ }^{1}$ Income of Canadians temporarily abroad including pay and allowances of Canadian Armed Forces abroad.

## 7.-Disposition of Personal Income, 1961-65

Note.-Comparable fiqures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1125, and for later years in succeeding editions.
(Millions of dollars)

| Item | 1961 | 1962: | 1963 ${ }^{\text {r }}$ | 1964 r | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Personal Direct Tazeg- |  |  |  |  |  |
| Income taxes. | 2,125 | 2,316 | 2,487 | 2,957 | 3.355 |
| Suecession duties and estate tazes. | 146 | 165 | 171 | 179 | 209 |
| Miscellaneous taxes................................ | 240 | -248 | - 2588 | ${ }_{2} 292$ | ${ }^{348}$ |
| Personal expenditure on consumer goods and services. | 24,466 | 25,926 | 27,487 | 29,666 | 32,063 |
| Personal net saving..................................... | 1,545 | 2,317 | 2,531 | 2,059 | 2,827 |
| Totals, Personal Income | 28,52\% | 30,972 | 32,384 | ${ }^{3}$ 3,153 | 38,904 |

## 8.-Personal Expenditure on Consumer Goods and Services, 1961-65

Nore.-Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1126, and for later years in succeeding edítions.
(Millions of dollars)

| Item | 1961 | 1962 r | 1963 I | 1864 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Food. | 5,829 | 6,123 | 6,414 | 6.724 | 7,114 |
| Tobacco and alcoholic beveragee. | 1,683 | 1,782 | 1,840 | 1,911 | 2,079 |
| Clothing and personal furnishings. | 2,432 | 2.526 | 2.643 | 2.803 | 2,972 |
| Shelter........................... | 3,812 | 3,986 | 4,323 | 4,595 | 4,907 <br> 3 |
| Household operation, | 3,032 | 3,202 | 3,352 3,430 | 3,776 3.730 | 4,120 |
| Transportstion............................... | 2,872 2,045 | 2,204 | 2,396 | 2,613 | 2, 418 |
| Piscellaneous. . . . . . . . . . . . . . . . . . . . . . . . . | 2,761 | 2,983 | 3,089 | 3,714 | 4,194 |
| Totals. | 24,466 | 25,326 | 27,487 | 29,60\% | 32,064 |
|  | 2,716 | 2,960 | 3.246 | 3,592 | 4,001 |
| Non-durable goods | 12,178 | 12,965 | 13, 518 | 14,389 | 15, 434 |
| Services........... | 9,572 | 10,001 | 10,723 | 11,685 | 12,628 |

## 9.-Federal, Provincial and Municipal Government Revenue and Expenditure, 1561-65

Nots.-Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1126, and for later yeara in sucoeeding editions.
(Millions of dollars)

| Item | 1961 r | 1962: | 1963 . | 19645 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Bevenue |  |  |  |  |  |
| Direct Tares: Persons- | 2,125 | 2,316 | 2,487 | 2,957 | 3,355 |
| Income tares................... | 2,146 | 2, 165 | 2, 171 | 2,179 | ${ }^{209}$ |
| Miscellaneous tares............... | 240 | 248 | 258 | 292 | 348 |
| Direct taxes: corporations, | 1,812 | 1,710 | 1,827 | 1,996 | 2,164 |
| Withholding taxes. | 116 | 125 | 127 | 140 | 168 |
| Indirect tares. | 4,947 | 5,585 | 5,911 | 6,685 | 7,482 |
| Inveatment IncomeInterest. | 483 | 536 | 605 | 648 | 728 |
| Profite of government businese enterprises | 643 | 715 | 790 | 878 | 260 |
| Employer and employee contributions to social ingurance and government pension fands. | 787 | B12 | 852 | 912 | 959 |
| Tetals, Revenite. | 11,089 | 12,212 | 13,088 | 14,697 | 16,378 |
| Erpenditure |  |  |  |  |  |
| Purchases of goods and mervices. . . . . . . . . . . . . . . . . . . . . . . . . | 7,236 | 7,717 | 8,075 | 8,654 | 9,596 |
| Transfer Payments- |  |  |  |  |  |
| Otherest......... | 1,170 | ${ }_{3}^{1.305}$ | 3,848 | 1, 132 | 1,685 |
| Capital assistance. | . 4 | ${ }^{27}$ | 61 | , 82 | ${ }^{84}$ |
| Subsidies | 251 | 292 | 311 | 323 | 310 |
| Surplus or deficit (on transactions relating to the national sccounts) | -1,005 | -854 | -690 | -21 | 246 |
| Tatals, Rypenditure. | 11,099 | 12,212 | 13,028 | 14,69\% | 16,373 |

## 10.-Analysis of Corporation Profits, 1361-65

Norz.-Comparable figures for the yeara 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1127, and for later years in succeeding editions.
(Millions of dollars)

| Item | 1961 | 1962' | 1963 r | 1964 r | 1985 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Corporation profits before tares. Dividends paid to non-reaidenta. | 2.841 | 3,235 $\mathbf{5 8 4}$ | 3,574 | 4,106 713 | $\begin{array}{r}4,448 \\ \hline 751 \\ \hline\end{array}$ |
| Corporation profita including dividends paid to non-reeidents | 3,427 | 3,819 | 4,188 | 4,819 | 5,199 |
| Deduct: Corporation income tax liabilities. Eicess of tax liebilitiea over collections. Tax collections. | $\begin{array}{r} -1.612 \\ 1.651 \end{array}$ | $\begin{array}{r} -1,710 \\ 67 \\ 1,658 \end{array}$ | $\begin{array}{r} -1,827 \\ 1,775 \\ 1,785 \end{array}$ | $\begin{array}{r} -1.996 \\ -101 \\ 8,097 \end{array}$ | $\begin{array}{r} -2.184 \\ -109 \\ 8.267 \end{array}$ |
| Corporation profits after taxes, | 1,815 | 2.109 | 2,361 | 2,823 | 3,035 |
| Deduet: Dividends paid to non-residents. | -588 | -584 | -614 | -713 | -751 |
|  | 1,229 -432 -40 | 1,525 -544 -44 | 1,747 -637 -44 | 2,110 -677 -44 | 2.284 -798 -44 |
| Undistributed Corporation Profits.............. | 757 | 937 | 1,*46 | 1,353 | 1,444 |

## 11.-Corporation Profits before Taxes (inciuding Dividends Paid to Non-residents), by Industry, 1961-65

Note.-Comparable figures for the yeare 1954 and 1955 are given in the 1957-58 Year Book, p. 1127, and for Ister years in succeeding editions.
(Millions of dollars)


## Section 2.-Industry Production Trends

## Indexes of Real Domestic Product

The Dominion Bureau of Statistics in 1963 made available a new set of production data pertaining to the entire spectrum of Canadian industries. These data, in the form of volume of production indexes, are measures of value added for each industry expressed in the dollars of a base year. Technically, they are termed "indexes of real domestic product (GDP) at factor coat originating by industry" * The value added, or GDP, volume indexes can be regarded as an extension of the index of industrial production $f$ to encompass the remainder of the economy. Concepts and basic methods used to construct both indexes are the same. Thus, industry production index coverage is extended from mining, manufacturing and electric power and gas utilities, for which volume indexes have been published since the 1920 s, to include all otber major industrial divisions-agriculture, forestry, fishing and trapping, construction, retail and wholesale trade, finance, insurance and real estate, transportation, storage and communication, public administration and defence, and community, recreation, business and personal service. However, only the index of industrial production is published on a monthly basis; for the remaining industries only quarterly and annual indexes are currently being published. The GDP indexes can also be regarded as an extension of the national accounting framework, i.e., as an elaboration of the supply side of the national income accounts.*

In measuring the output of a single product such as steel, it is normal to think in terms of tons of steel when the question of quantity arises. When measuring the combined production of steel and natural gas, there is an obvious need for a common denominator and it is appropriate to use the average unit prices of a certain time period (chosen as the base) to value the quantities produced before adding them together. The resultant quantity, volume or real output measure can be subsequently left in its constant or base

[^351]period dollar form or it can be expressed in index number form. The latter is accomplished by dividing the constant dollar aggregate of the current period by the dollar aggregate for the base period and multiplying by 100 . In constructing a quantity index for a combination of industries where the output of one industry becomes the input of another, the portion double-counted must be eliminated. This is accomplished by revaluing both intermediate input (materials, fuel, etc.) and total output in terms of the dollars of a common base year and subtracting the constant dollar value of the former from the latter to yield a constant dollar value added aggregate.* This aggregate is the quantity or volume measure represented by the indexes presented herein.

The annual indexes are well suited for studies of production trends, growth rates and inter-industry comparisons, but the quarterly indexes provide a much better tool for the study of the cyclical behaviour of industries, short-term changes in production and, in fact, for most types of current analysis. Statistics computed for less than annual intervals, however, are frequently subject to strong seasonal influences, and variations in the number of working days during a quarter may cause differences in the levels of output between two quarters which otherwise would not exist. Accordingly, the quarterly real output indexes have been adjusted for both seasonal and calendar variation. The effects of the seasonal adjustment are shown on the quarterly chart for the period 1949-65.


Factors Underlying Industrial Output Trends, 1946-65.-The early postwar period was marked by several major expansions. The first was based on satisfying the backlog of war-deferred investment and consumer demand and on supplying the needs of the war-devastated countries, especially for various materials. This was followed by some slowing down in production but the requirements of defence-supporting industries after the outbreak of the Korean hostilities and stockpiling requirements at home and abroad introduced a second expansionary period. The third was the investment boom of the mid-1950s during which output reached a new high level. These strong demand influences combined to make most of this period one of fairly rapid and sustained growth. During the late 1950s the rate of increase diminished, as external sources of supply for many commodities multiplied and as competition intensified. At the same time, there was an absence of strong stimulants to domestic demand, such as the deferred demand and the population growth of the preceding period. During the 1960s, however, the first waves of the postwar generation exercised a growing influence on the demand for goods and services

[^352]and this proved to be one of the major stimuli to the current expansion which began early in 1961 and continued into 1966. Other notable features of the expansion were: the relatively slow growth of imports compared with previous expansion periods, particularly after the stabilization of the Canadian dollar and other government measures undertaken in mid-1962 (although some acceleration took place in imports of machinery and equipment during 1964 and 1965 in response to the increased investment in construction and plant and equipment); the increase in exports, particularly during the latter part of 1963 and early 1964 when large amounts of wheat were sold abroad; the above-average output of the mining and agriculture industries since 1962; the substantial gains in the production of the iron and steel and motor vehicle and parts industries throughout most of the period; and the increased investment activity in both non-residential and residential construction and in machinery and equipment during 1964 and 1965.

Along with the increases in total final demand, there were shifts in the composition of demand, which affected the output of the various industries. Imports retained roughly the same relative share of the gross national product but the share of exports declined from 27.1 p.c. in 1946 to 21.5 p.c. in 1965 , an indication of the growing importance of the domestic market as an outlet for the products of Canadian industry. Government expenditure and business gross fixed capital formation made considerable relative gains but personal expenditure on goods and services as a percentage of total expenditure declined from 67.8 p.e. in 1946 to 61.6 p.c. in 1965.

Even more remarkable than some of the demand-induced changes were the striking changes brought about by the technological discoveries and innovations that transformed whole production processes and opened up previously unknown areas in the fields of manufacturing, transportation and communication. Newer industries, such as air transport, assumed major importance in a comparatively short time; entirely new industries, such as gas pipelines, appeared; and a profusion of new products were created, such as the petrochemicals of the chemicals industry and the television and other electronic products of the telecommunication equipment industry. As was to be expected, the industries in a position to benefit from such innovations were among the most rapidly expanding in the economy, although the impact of the expansion spread through the entire economic system. The changes in production and demand also influenced the level of employment in the various industries; there was a considerable shift in employment during the postwar period from the goods-producing to the service-producing industries and most of the loss in the former took place in agriculture.
12.-Quantity Indexes of Real Domestic Product at Factor Cost, by Industry of Origin, 1950-65
$(1949=100)$

| Industry | 1050 | 1051 | 1952 | 1953 | 1954 | 1955 | 1956 | 1057 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Agriculture | 108.2 | 120.9 | 148.8 | 136.3 | 104.3 | 132.1 | 141.7 | 117.5 |
| Forestry., | 118.9 | 141.5 | 129.7 | 123.7 | 128.4 | 135.7 | 143.4 | 130.5 |
| Fishing and trapping | 108.8 | 111.4 | 101.6 | 103.5 | 112.3 | 105.6 | 111.6 | 105.5 |
| Mining. ............ | 109.3 | 123.5 | 131.8 | 143.3 | 158.9 | 187.8 | 218.3 | 239.3 |
| Manufaeturing | 106.7 | 115.8 | 120.2 | 128.9 | 128.0 | 138.3 | 151.2 | 150.9 |
| Construction. | 106.7 | 110.6 | 123.2 | 130.$]$ | 129.8 | 139.8 | 165.7 | 174.7 |
| Electric power and gas utilities | 113.2 | 129.4 | 140.7 | 147.8 | 161.6 | 183.0 | 204.4 | 219.9 |
| Transportation, storage, communication | 103.3 | 113.1 | 119.4 | 121.0 | 117.9 | 133.6 | 149.2 | 149.6 |
| Trade....................... | 106.9 | 108.1 | 114.6 118.4 | 121.3 123.2 | 120.6 129.9 | 138.0 136.6 | 144.2 141.5 | 1450.9 |
| Public administration and defence | 106.6 | 119.0 | 136.2 | 144.2 | 151.3 | 156.3 | 158.8 | 163.7 |
| Community, recreation, blasiness and personal service. | 103.2 | 107.9 | 112.1 | 115.7 | 117.4 | 119.8 | 127.0 | 330.6 |
| Real Domestic Product | 106.5 | 114.8 | 122.2 | 127.4 | 124.7 | 137.1 | 149.6 | 148.6 |

## 12.-Quantity Indexes of Real Domestic Product at Factor Cost, by Industry of Origin, 1950-65-concluded

| Indurtry | 1958 | 1959 | 1960 | 1961 | 1962 | 1983 | 1964 | 1865 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Agriculture. | 125.1 | 125.1 | 127.9 | 116.0 | 134.7 | 147.5 | 140.2 | 149.9 |
| Forestry. | 115.6 | 130.6 | 141.8 | 130.8 | 140.5 | 149.4 | 159.3 | 160.4 |
| Fibhing and trapping | 117.8 | 105.8 | 104.0 | 115.7 | 130.4 | 125.2 | 123.6 | 120.4 |
| Mining. . . . . . . . . | 243.3 | 275.4 | 275.6 | 283.0 | 304.7 | 318.3 | 346.4 | 365.6 |
| Manufacturing. | 148.0 | 159.0 | 181.2 | 166.9 | 181.2 | 183.9 | 211.9 | 230.1 |
| Construction. | 178.4 | 170.7 | 163.0 | 168.4 | 170.9 | 173.6 | 190.4 | 211.2 |
| Eiectric power and gas utilities. | 241.3 | 273.9 | 298.5 | 316.3 | 388.0 | 867.5 | 405.7 | 448.3 |
| Transportation, storage and commurication | 146.7 | 160.5 | 163.9 | 172.0 | 179.2 | 198.0 | 209.3 | 224.8 |
| Trade. | 147.4 | 156.4 | 156.6 | 158.2 | 166.8 | 173.2 | 183.8 | 197.6 |
| Finance, insurance snd real estate. | 156.1 | 163.5 | 169.5 | 175.5 | 188.9 | 194.5 | 203.0 | 211.9 |
| Public adminiatration and defence. | 171.3 | 175.0 | 177.8 | 183.9 | 187.8 | 188.1 | 189.8 | 190.7 |
| Community, recreation, business and pe sonal service. | 135.1 | 141.3 | 147.4 | 152.2 | 158.2 | 185.0 | 171.0 | 178.8 |
| Leal Domestic Produet | 151.5 | 154.8 | 162.5 | 105.7 | 176.5 | 186.4 | 197.0 | 211.6 |

Industrial Expansion, 1946-65.-Although all the major industry groups expanded during 1946-65, development was not uniform throughout the period. Three important types of factors affecting the expansionary paths of industries were in evidence at some point during the period. The first may be described as some special factor at work in a particular industry, the effects of which would be most noticeable in that industry-for example, the demand for uranium which had an important influence on the mining industry during the latter half of the 1950s, the opening up of new mineral resources such as the iron ore mines in Quebec-Labrador, and certain technological innovations such as the development of synthetic materials or television. The second type of factor is much more general in its effects and in its causes. Such factors as increased demand for consumer goods resulting from a rising standard of living and a growing population, shifts in world trading patterns or shortages causing increased demand for export goods, the surge of investment activity associated with replacement cycles, as well as attempts to broaden the base of economic activity through investment in research, social overhead capital, education, improved management and marketing techniques, or a more efficient production process (or a confluence of all these factors) appear to lie at the root of such postwar expansions as the investment boom of the mid-1950s or the rapid expansion in production since 1961. The third type of factor would be some unique and far-reaching event, of which the Korean War might serve as a conspicuous example.

All three factors, jointly or in turn, have reacted on the various industries resulting in the upswings in aggregate production. The percentage growth of each of the main industrial groups in the 1946-65 period was as follows:-

| Induatry | p.c. | Industry | p.c. |
| :---: | :---: | :---: | :---: |
| Agriculture. | 1.5 | Trade. | 4.1 |
| Forestry.. | 1.7 | Finance, insurance and real |  |
| Fishing and trapping. | 1.8 | estate... | 5.0 |
| Mining. | 9.1 | Public administration and de- |  |
| Manuiacturing. | 4.8 | fence...................... | 4.0 |
| Construction.................. | 5.1 | Community, recreation, business and personal service. | 3.6 |
| Electric power and gas utilities, | 9.6 |  | 3.0 |
| Transportation, atorage and communication.. | 4.6 | Rral Domestic Product. | 4.4 |

Foremost in growth was the electric power and gas utilities industry, followed by the mining and construction industries. All three were strongly affected by technological advances, new discoveries and a fairly well sustained demand for their products. The demand in mining frequently came from abroad, resulting in relatively high export sales and providing incentive for the opening up and developing of new mineral resource areas. Some slackening in construction activity was evident following the unusually high levels reached during the mid-1950a but since 1963 the swing has again been upward.

Although most of the other industry divisions (except agriculture, forestry and fishing and trapping) expanded at roughly the same average rate of between about 4 p.c. and 5 p.c., the manufacturing, trade, and transportation, storage and communication industry divisions, which together account for about one half of the total output, also showed strikingly similar cyciical patterns. Within manufacturing it was the durables component that expanded particularly rapidly during the cyclical upturns and that benefited from the need for machinery and equipment in the periods of heavy investment and from increased consumer demand for such products as motor vehicles and electrical appliances during the current expansion. Non-durables maintained a fairly steady rate of expansion for most of the postwar period, largely in response to increased population and demand for induatrial materials. A similar pattern was observable in trade, with retail trade exhibiting a relatively smooth expansionary trend.

The community, recreation, business and personal service industry division was relatively insensitive both to cyclical and irregular influences but, along with some other steadily expanding industries such as finance, insurance and real estate, non-durables and retail trade, it belped to sustain aggregate production and growth during periods of contraction and expansion. Although this division as a whole showed a less-than-average rate of growth, some of its components, such as business services, education and hospitals and restaurants, hotels and motels, were among the most rapidly and steadily expanding in the economy.

The rates of growth in the forestry, agriculture, and fishing and trapping divisions were also below average and were subject to pronounced irregular fluctuations in outputforestry because of the nature of its production processes and also, to some extent, because of its sensitivity to changes in world demand and price; agriculture because of marked year-to-year differences in output more often caused by weather conditions and similar factors than by changes in prices and demand conditions; and fisheries because of its dependence on the vagaries of nature.

## Production of Commodity-Producing Industries

The data contained in the tables under this heading are published in the DBS report Survey of Production.* The scope of the survey of production is limited to industries chiefly engaged in the production of commodities and it measures production in current dollars. This is in contrast to the real domestic product series (pp. 1080-1084) which encompasses all industries and measures production in terms of the dollars of a base year.

Tables 13 and 14 give "census value added" production data, classified by province and industry, respectively. Census value added is derived by deducting the cost of materials, fuel, electricity and process supplies consumed in the production process from the gross value of output (shipments or sales adjusted for inventories). The figures include interim classification and vaiuation changes in mining and manufacturing brought about by the adoption of the 1960 standard industrial classification of establishments. However, the two industry aggregates continue to consist of census value added accruing from their primary activity only.* Standard industrial classification changes have not yet been implemented for other industries.

[^353]13.-Census Falue Added for Commodity-Producing Industries, by Prorince, 1981-63

| Province or Territory | 1961 |  | 1962 |  | 1968 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$000 | p.e. | \$000 | p.c. | \$000 | p.c. |
| Newfoundland ${ }^{\text {a }}$ | 261,003 | 1.4 | 290, 161 | 1.4 | 307.619 | 1.3 |
| Prince Edward Ialand. ............... | 45,357 | 0.2 | 50, 564 | 0.2 | 52, 855 | 0.2 |
| Nova Seotia.......................... | 408,798 | 2.1 | 422,516 | 2.0 | 445,712 | 1.9 |
| New Brunswick..................... | 329,480 | 1.7 | 329,107 | 1.5 | 354,632 | 1.6 |
| Quebec. . . . . . . . . . . . . . . . . . . . . . . . . | 5,043,234 | 26.1 | 5,415,924 | 25.3 | 5,588,386 | 24.4 |
| Ontario. | 8,073,123 | 41.8 | 8,885,160 | 40.6 | 9,314,608 | 40.7 |
| Manitoba. | 693,411 | 3.6 | 895,312 | 4.2 | 909,463 | 4.0 |
| Sagkstchewan. | 765,917 | 4.0 | 1,252,440 | 5.8 | 1,557,395 | 6.8 |
| Alberta. | 1,738,585 | 9.0 | 1,908,899 | 9.0 | 2,047,788 | 9.0 |
|  | 1,907,739 | 9.9 | 2, 127.598 | 9.8 | 2,262,789 | 10.0 |
| Yukon and Northwest Territories**. | 30,479 | 0.2 | 29,464 | 0.1 | 30.000 | 0.1 |
| Cana | 19,297,126 | 100.1 | 31,402,138 | 100.0 | 22, $\mathbf{7 7 1 , 3 4 7}$ | 100. |

I Excludes agriculture. : Construction figures for the Yukon and Northwest Territories are included with British Columbia.

## 14.-Census Value Added Tor Commodity-Producing Industries, by Province and Industry, 196

| Industry | Newfoundland |  | Prince Edward Ialand |  | Nova Scotia |  | New Brunswick |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$1000 | p.c. | \$000 | p.e. | \$1000 | p.c. | $\$^{\prime} 000$ | p.c. |
| Agriculture. |  |  | 13,665 | 25.8 | 24,877 | 5.6 | 23,355 | 6.6 |
| Foreatry. | 19,654 | 6.4 | 492 | 0.9 | 12,610 | 2.8 | 38,307 | 10.8 |
| Fisheries. | 20, 429 | 6.6 | 4,630 | 8.8 | 36,644 | 8.2 | 9,353 | 2.6 |
| Trapping | 79.59 | 25. |  | $\cdots$ | 100 | 8. | 221 | 0.1 |
| Mrining.. | 79,600 | 25.9 | 296 | 0.6 | 45,808 | 10.3 | 11,866 | 3.3 |
| Electric power | 15,441 | 5.0 | 2.696 | 5.1 | 28,515 | 6.4 | 24, 473 | 6.9 |
| Manufacturea. | 74, 001 | 24.1 | 10,621 | 20.1 | 188,064 | 42.2 | 169,640 | 47.8 |
| Construetion. | 88,435 | 32.0 | 20,454 | 38.7 | 109,095 | 24.5 | 77,617 | 21.9 |
| Totals | 307,619 1 | $104.0{ }^{1}$ | 62,865 | 100.0 | 445,712 | 100.t | 354,432 | 100. ${ }^{\text {c }}$ |
|  | Quebee |  | Ontario |  | Manitoba |  | Sagkatchewan |  |
|  | \%000 | p.c. | \$'000 | p.c. | \$'000 | p.e. | \$ 000 | p.e. |
| Asticulture. | 275,509 | 4.9 | 599,991 | 6.4 | 199,209 | 21.9 | 915,699 | 58.8 |
| Foreatry. | 169, 100 | 3.0 | 118,180 | 1.3 | 5,395 | 0.6 | 2,992 | 0.2 |
| Fisharies. | 6,223 | 0.1 | 5,504 | 0.1 | 4,356 | 0.5 | 1,300 | 0.1 |
| Trapping | 1,503 | $\cdots$ | 8.442 | $\cdots$ | 1,627 | 0.2 | 1,416 | 0.1 |
| Mining... | 326.159 | 5.9 | 363.843 | 3.9 | 36,678 | 4.0 | 224,332 | 14.4 |
| Manufactures | ${ }_{3}^{268.733}$ | 4.7 64 | 6 326.438 | 3.5 | 44,109 | 4.8 | 43,023 | 2.7 |
| Construction. | -957,541 | 17.1 | 1,357, 614 | 14.6 | 215,840 | 23.8 | 231, 384 | 14.9 |
| Totals. | 5,588,386 | 104.0 | 9,314,*08 | 100.0 | 900,463 | 100.0 | 1,557,895 | 100.0 |
|  | Alberta |  | British Columbia |  | Yukon and Northwest Territories |  | Canada |  |
|  | \$ 000 | p.e. | \$ 000 | p.e. | 8000 | p.e. | '000 | p.c. |
| Agriculture. | 507,790 | 24,8 | 104,887 | 4.6 |  |  | 2,664,992 | 11.6 |
| Fishertry.. | 19,440 | 1.0 | 362,384 | 16.0 | 562 | 1.9 | 749,096 | 3.3 |
| Trapping.. | ${ }^{676}$ | 0 | 40,460 | 1.8 | 796 | 2.6 | 130.376 | 0.6 |
| Mrapping. | 1,949 593,735 | 0.1 | - 922 | $\bigcirc$ | 934 | 3.1 | 12,174 | 0.1 |
| Ejectric po | 59,547 | 29.0 2.9 | 150,768 101376 | 6.7 | 22,968 | 76.6 | 1, 855, 853 | 8.1 |
| Manafacturen | 394,317 | 2.9 19.2 | 1,060.772 | 4.5 46.9 | - 3 ,260 | 10.9 | 911,671 | 4.0 |
| Construction. | 470,334 | 23.0 | 1, ${ }_{441,20132}$ | 46.5 <br> 18.5 | 1,480 | 4.9 | $12,568.168$ $3,978.517$ | 54. 17.4 |
| Totals. | 2,047,788 | 100.6 | 2,262,789 | 100.0 | 30,000 | 100.0 | 22,871,847 | 100.0 |

[^354]${ }^{2}$ Includes the Yukon and Northwest Territories.
${ }^{3}$ Included with British

## Section 3.-Aggregate Productivity Trends

Increasing interest in questions of economic growth, cost-structure and international competitiveness, and in the relationships between output, employment, earnings and prices has focused attention on productivity as a framework within which such problems can usefully be discussed. Recognizing this interest, the Dominion Bureau of Statistics has made available annual indexes of output per person employed and per man-hour in Canada covering the commercial industries as a whole, with separate detail for agriculture and the commercial non-agricultural industries, manufacturing and the residual commercial nonmanufacturing industries of this universe.*

Although these measures relate output to a single input only, namely labour time, they do not measure the exclusive contribution of labour to output. Changes in indexes of output per unit of Iabour input reflect the combined influence of a number of separate though interrelated factors such as the amount and quality of capital equipment, the extent of utilization of available capacity, managerial efficiency and the impact of technological progress, as well as the skill and effort of the work force.

Sources of Data.-The output components of the various indexes of output per unit of labour input referred to here are the historical indexes of "real domestic product (GOP) at factor cost by industry of origin", described in Section 2, p. 1080. These indexes, which were developed within the conceptual framework of the national accounts and which measure in constant dollar terms the unduplicated contribution of each component industry to total output, are considered basically suitable for productivity measurement when matched with the corresponding input measures.

The major sources for the employment and man-hour indexes were the monthly labour force and employment surveys, and these were supplemented by data from such sources as the annual censuses of manufacturing and mining and the decennial census of population. Since the data from these diverse sources varied considerably in their coverage, concepts and methods of compilation, care had to be exercised in their selection, adaptation and combination into aggregate measures of labour input which would be conceptually and statistically consistent, both internally and in relation to the output data. Labour force survey data were used for the paid worker estimates of agriculture and of fighing and trapping, while those for manufacturing and mining were based on adjusted annual census data. Estimates for most of the remaining industry divisions were derived from adjusted employment survey data. Estimates of other than paid workers (own-account workers, employers and unpaid family workers) were derived mainly from the labour force survey. The estimates of average hours worked, which were needed for the indexes of output per man-hour, were also based on labour force survey data, except in the case of manufacturing, where estimates of man-hours paid from the census of manufactures were adjusted to the man-hours worked concept.

Growth Rates.-Output per person employed in the commercial non-agricultural industries, to which the initial coverage of the indexes was confined, grew at an average annual rate of 2.5 p.c. between 1946 and 1965. Because of the decline in average hours worked per person, this was a lower rate of growth than that of output per man-hour which, during the same period, increased by 3.2 p.c. per annum. Corresponding figures for manufacturing were 3.4 p.c. and 3.8 p.c. and those for the residual non-manufacturing industries of the commercial non-agricultural sector were 2.1 p.c. and 2.9 p.c., respectively.

In agriculture, the average annual rates of growth of output per person employed and per man-hour between 1946 and 1965 were 5.3 p.c. and 5.5 p.c., respectively. However, in view of the difficulties of measuring the number and especially the man-hours of persons employed in agriculture, data presented for this industry division should be regarded as

[^355]approximate. In the commercial industries as a whole, output per person employed increased between 1946 and 1965 at an average annual rate of 3.3 p.c., while output per manhour grew by 4.1 p.e. per annum.

Inter-industry Shift Effects.-In addition to measuring the changes in productivity within the component industries, the aggregate productivity indexes measure the effect of shifts in employment and production between industries having different levels of productivity. One of the most significant such shifts within the commercial industries of Canada during the postwar years was from agriculture to the non-agricultural industries, where a higher level of output per unit of labour input prevails. The effect of this shift can be measured in various ways and a number of alternative calculations have been carried out for the most recent annual publication,* all of which confirm, to a greater or lesser extent, that the decline in the relative importance of agriculture made a positive contribution to the total increase in output per person employed in the commercial industries between 1946 and 1965.

* DBS Catslogre No. 14-201.
15.-Indexes of Output per Person Employed and per Man-Hour, 1946-65 (1949 = 100)


[^356]15.-Indexes of Output per Person Employed and per Man-Hour, 1946-65-concluded

${ }^{1}$ Calculated by fitting a straight line to the logarithms of the data using the least aquares method.


## Section 4.-Canadian Balance of International Payments*

Canada's total commercial and financial transactions with residents of other countries are presented in summary form in statements of the Canadian balance of international payments. The current account shows separately the principal types of transactions in goods and services with non-residents. The capital account provides a distribution of capital movements into direct and portfolio investments and into long-term and short-term forms. The difference between the current account balance and the balance of these capital movements in an accounting period is reflected in the change in the official holdings of gold, foreign exchange, and Canada's net International Monetary Fund position.

During the past decade, a wide degree of imbalance has characterized Canada's international payments. Large current account deficits have customarily been associated with periods of Canadian prosperity. High levels of investment, rising personal consumption and the growth in government expenditures, including defence outlays abroad, have contributed to the deficits. These large current deficits, which reached a peak of $\$ 1,487,000,000$ in 1959, have reflected and been financed by substantial inflows of capital. Following this record high level, the imbalances in current transactions narrowed in successive years to $\$ 424,000,000$ in 1964 but widened in 1965 to $\$ 1,083,000,000$, as a result of a sharp contraction in the merchandise surplus.

[^357]Current Account Transactions.-The surplus on merchandise trade,* which emerged in 1961 for the first time since 1954, expanded sharply in 1963 and in 1964 when it exceeded $\$ 700,000,000$; an important element in this rise was the extraordinary sales of wheat and flour to the U.S.S.R. and other Communist countries. Thus, the reduction of Canada's deficit on current transactions in goods and services between 1959 and 1964, followed by an upturn in 1965, was mainly the result of a shift in the balance of commodity trade. This balance varied widely; the record deficit of $\$ 728,000,000$ occurred in 1956 when it accounted for more than one half of the total current account deficit and the unusually large surplus of $\$ 701,000,000$ for 1964 exceeded the level of the merchandise surpluses of the immediate postwar years. The export balance of $\$ 118,000,000$ in 1965 was markedly lower than the surpluses of $\$ 173,000,000$ and $\$ 184,000,000$ in 1961 and 1962. The non-merchandise deficit rose rapidly from 1955 , when it still stood below $\$ 500,000,000$, to 1961 , when the $\$ 1,000,000,000$-level was exceeded. In recent years, the "invisible" deficit has fluctuated within a fairly narrow range and stood at $\$ 1,201,000,000$ in 1965.

Since 1951, when merchandise exports and imports were almost equal at $\$ 3,900,000,000$, exporta have increased fairly steadily to a record of $\$ 8,745,000,000$ in 1965 . Imports, on the other hand, have shown wider fluctuations in their growth pattern. The value of imports in current dollars rose more than 40 p.c. in two years to $\$ 5,565,000,000$ in 1956 and, except for a substantial drop of nearly 8 p.c. to $\$ 5,066,000,000$ in 1958 , remained at about that level until 1960. Thereafter the value rose at a generally increasing rate of growth to $\$ 8,627,000,000$ in 1965 , which was about 56 p.c. above 1960 .

In the past decade, the relative importance of exports of manufactured goods increased markedly, that of metals and minerals advanced more moderately, and the percentage share for forest products narrowed visibly. The relative position of wheat and wheat flour, which had been diminishing, recovered sharply in 1961 as a result of the large shipments of grain to Mainland China and other Communist countries. The very heavy shipments of wheat on the Russian account, together with sizable exports to Britain, Japan, Mainland China, West Germany and Eastern European countries, boosted the total value of wheat and wheat flour exports in 1964 to about $\$ 1,100,000,000$, although the total declined to some $\$ 900,000,000$ the following year. During the 1960 s, an increasing share of the Canadian national output has moved into foreign markets. Contributing to the gain of some $\$ 000,000,000$ in merchandise exports in 1965 were larger shipments of meat, wood pulp, newsprint, non-ferrous metals, crude petroleum and natural gas, chemicals and fertilizers, and manufactured goods. Within the manufactured goods group, exports of motor vehicles and parts doubled from less than $\$ 180,000,000$ in 1964 to more than $\$ 350,000,000$ in 1965 , following the signing at the beginning of the year of the CanadianUnited States Automotive Agreement. However, with the removal of tariffs from the two-way trade in new cars and parts, the rise in imports exceeded that in exports and the deficit on trade in automobiles and parts expanded in 1965.

The value of all imports rose sharply in 1965 to the highest recorded level of $\$ 8,627,000,000$. Motor vehicles and parts accounted for over $\$ 300,000,000$ of the expansion and smaller but still substantial increases took place in imports of industrial materials, machinery, equipment and tools, coal and fuel oil, and consumer goods. Small rises in a variety of food commodities were, however, not enough to counterbalance a decline of nearly $\$ 50,000,000$ in raw sugar imports.

The deficit on Canada's non-merchandise transactions with foreign countries, which since 1959 has been on a high plateau exceeding $\$ 1,000,000,000$, rose to $\$ 1,201,000,000$ in

[^358]1965. This deficit has risen about 150 p.c. in the past decade. A total of $\$ 761,000,000$ or more than $\mathbf{6 0}$ p.c. of the $\mathbf{1 9 6 5}$ deficit was directly related to Canada's indebtedness abroad. Interest and dividend payments by Canadians to non-resident investors reached $\$ 1,071,000,000$, transfers in other forms of investment income amounted to well over $\$ 200,000,000$, and there were also growing payments abroad for a variety of business services. Furthermore, some hundreds of millions of dollars of earnings, which accrued to foreigners but which were retained in Canada for reinvestment, are excluded from the current account.

The contribution by travel transactions of nearly one fifth of the deficit in 1960 contracted sharply in the following years, in particular after the lowering of the Canadian dollar in May 1962 to a new fixed par value of $92 \frac{1}{2}$ cents (U.S.). From a small deficit in 1962, the balance on travel changed to a small surplus in 1963 and then returned to a deficit position of $\$ 50,000,000$ and $\$ 32,000,000$ in 1964 and 1965 , respectively. Net payments of migrants' funds and inheritances, which represented about 6.5 p.c. of the "invisible" deficit in 1961, narrowed gradually to a position of balance in 1965. The deficit on freight and shipping services fluctuated between about 3 p.c. and 8.5 p.c. of the total in the period 1961-65, and the value of gold production available for export served to reduce the non-merchandise deficit by between 11.5 p.c. and 15 p.c. The substantial remaining portion of the deficit, fluctuating between 36 p.c. and 44 p.c., originated from other transactions, including miscellaneous investment income, referred to previously, and official contributions; these stood at a record level of $\$ 92,000,000$ in 1965.

The characteristic bilateral distribution of the Canadian current account balances was maintained in 1965; a surplus from transactions with overseas countries partially covered a deficit with the United States. However, a rise of nearly 17 p.c. in this deficit from $\$ 1,635,000,000$ in 1964 to $\$ 1,912,000,000$, combined with a decline of about 32 p.c. in the surplus with overseas countries from $\$ 1,211,000,000$ to $\$ 829,000,000$, contributed to the increase in the over-all deficit from $\$ 424,000,000$ to $\$ 1,083,000,000$. In current dollars, the 1965 deficit with the United States exceeded the previous record level of $\$ 1,650,000,000$ reached in 1956; the surplus on current transactions with Britain declined from the recent high level of $\$ 605,000,000$ in 1964 to $\$ 510,000,000$; and the surplus with other countries was nearly halved from $\$ 606,000,000$ in 1964 to $\$ 319,000,000$ in 1965.

Capital Movements.-In 1965, Canada continued to draw substantially on the resources, both real and financial, of the other countries of the world, as the net capital inflow of $\$ 1,240,000,000$ (excluding the change in official monetary assets) moved up again to the $\$ 1,000,000,000-\mathrm{to}-\$ 1,500,000,000$ range that prevailed from 1956 to 1962 . It was more than 50 p.c. above the net inflow in 1964 and at about the same level as in 1961. Capital movements in long-term forms, covering direct investment, portfolio security transactions, official loans and other long-term investments, amounted to $\$ 713,000,000$ in 1965 , down 13 p.c. from the total of $\$ 820,000,000$ in the previous year. The long-term capital inflow covered only about two thirds of the current account deficit following the years 1963 and 1964 which were the first since 1956 in which the long-term inflows exceeded the deficit on transactions in current goods and services. Capital movements in short-term forms, which were on balance outwards in 1964, were reversed into sizable inflows totalling $\$ 527,000,000$. Contributions to the inflows were increases in foreign currency banking loans to Canadian residents together with a reduction of their bank balances and other short-term funds abroad. An offsetting influence was the decline in the inflow attributable to the total trangactions in the short-term paper and obligations of Canadian finance companies.

The net inflow in 1965 of $\$ 405,000,000$ of capital for direct investment in foreigncontrolled enterprises in Canada was up 50 p.c. from the low levels of 1963 and 1964.

In the main, the inflows continued to reflect investment by foreign corporations in their subsidiaries and branches, which contributed to new capital formation in Canada; manufacturing enterprises and petroleum and natural gas received the largest shares. The flow of direct investment abroad of Canadian capital was estimated at $\$ 125,000,000$ in 1965 , which was higher than in 1964 but slightly lower than in 1963.

Capital inflows arising from transactions in Canadian and foreigo securities amounted to $\$ 541,000,000$ compared with $\$ 645,000,000$ in 1964 . New issues of bonds sold to investors in the United States continued to be the most important factor in the inflow. Canada received $\$ 32,000,000$ under the arrangements relating to the Columbia River Treaty; the remaining capital movements in long-term forms were dominated by large net outfows arising from loans and advances under official programs to finance Canadian exports. Canada's external monetary assets rose by $\$ 157,000,000$ in 1965 . The official holdings of gold and foreign exchange declined by $\$ 11,000,000$ and Canada's net International Monetary Fund position rose by $\$ 168,000,000$.

Direct investment inflows have been a significant ingredient in the capital account in the past decade. Continuing and aubstantial for nearly the entire period, these receipts contributed in particular to resource development and the growth of associated industries. However, from 1956 to 1959 and again in 1963 to 1965 , the inflow for direct investment, substantial though it was, was less than the inflow of portfolio capital, as some of the sharply increased demands for new capital were channelled to foreign capital markets through the sale to non-residents of new issues of Canadian bonds and debentures. Corporations, provincial governments and municipalities were all important borrowers.

## 16.-Current Account Transactions Between Canada and All Countries, 1946-65

(Millions of dollart)

| Year | Current Receipts |  | Current Payments |  |  | Net Balance on Current Account indicating Net Movement of Capital |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Merchandise | Other | Merchandise | Ofticial Contributions | Other |  |
| 1946. | 2,393 | 972 | 1,922 | 97 | 1,083 | + 363 |
| 1947. | 2,723 | 1.025 | 2,585 | 38 | 1,126 | + 49 |
| 1948. | 3.080 | 1,117 | 2,598 | 23 | 1,075 | + 451 |
| 1949. | 2,989 | 1,100 | 2,696 | ${ }^{6}$ | 1,210 | ${ }_{319}^{177}$ |
| 1950. | 3,139 | 1,148 | 3,132 | 5 | 1,469 | 319 |
| 1951.. | 3,950 | 1,342 | 4,101 | 9 | 1,694 | - ${ }^{512}$ |
| 1952. | 4,339 | 1,534 | 3.854 | 16 | 1.818 | 1 <br> $\pm \quad 187$ |
| 1958. | 4,152 | 1,587 | 4,212 | 25 | 1,950 | - 448 |
| 1954... | 3,934 | 1. 698 | 3,916 | 11 | 2,029 | - 687 |
| 1955... | 4,332 | 1,749 | 4,543 | 24 | 2,201 |  |
| 1956. | 4,837 | 1,795 | 5,565 | 30 | 2,409 | - 1,372 |
| 1957. | 4,894 | 1,742 | 5,488 | 40 | 2,559 | $=\quad 1,451$ |
| 1958. | 4,880 | 1,704 | 5,068 | ${ }_{73}$ | 2,612 | - 1, 187 |
| 1959.... | 5,151 | 1,725 | 5,572 | 72 | 2,719 | $=1,233$ |
| 1960... | 6,392 | 1,787 | 5,540 | 61 | 2,811 | $\cdots$ 1,203 |
| 1961. | 5,880 | 1,934 | 5,716 | 86 | 2,979 | - 928 |
| 1962. | 6,387 | 2,077 | 6. 203 | 36 | 3,055 | $\square \quad 801$ |
| 1963... | 7,082 | 2,230 | 6.579 | 65 | 3.189 | - ${ }_{424}$ |
| 1964... | 8,238 $\mathbf{8 , 7 4 5}$ | 2,558 2,758 | 7,537 8,627 | 69 92 | 3,612 3,867 | - 1,083 |
| 1965... | 8.745 | 2,758 | 8,627 | 92 |  |  |

## 17.-Geographical Distribution of the Balance on Current Account Between Canada and Other Countries, 1846-65

(Millions of dollara)

| Year | United States ${ }^{1}$ | Britain | Other Overseas Countries | $\stackrel{A H}{\text { Conutries }}$ | Year | United States | Britain | Other Overseas Countries | $\begin{gathered} \text { All } \\ \text { Countries } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1946 | - 607 | + 500 | $\pm 470$ | + 363 | 1956. | - 1,650 | + 253 | + 25 | - 1,372 |
| 1947 | - 1, 134 | + 633 | + 550 | + 49 | 1857. | - 1.579 | + 120 | $+$ | $-1.431$ |
| 1948. | - 393 | + 486 | + 358 | + 451 | 1958. | - 1,167 | + 97 | - 67 | - 1,137 |
| 1949. | - 601 | + 446 | + 332 | + 177 | 1959. | - 1.221 | + 16 | 282 | - 1, 487 |
| 1950. | - 385 | + 24 | + 42 | 319 | 1960 | - 1,359 | + 169 | 43 | - 1,233 |
| 1051. | 945 | + 228 | + 210 | - 512 | 1961 | - 1,341 | + 195 | + 218 | 928 |
| 1952. | - 830 | + 387 | + 630 | + 187 | 1962. | - 1,092 | + 225 | + 37 | 830 |
| 1953. | - 907 | + 132 | + 327 | - 448 | 1988. | - 1,148 | + 417 | + 210 | 521 |
| 1954. | $-8000$ | + 222 | + 147 | 424 | 1964 | - 1,635 | + 605 | + ${ }^{+}$ | 1093 |
| 1955. | - 1,029 | $+332$ | $+10$ | 687 |  | $\leftrightarrow 1,912$ | + 510 | + 819 | 1,083 |

: Includes all net exporta of non-monetary gold.

## 18.-Ralance of International Payments Between Canada and All Countries, 1959-65

(Millions of dollars)

| Item | 1958 | 1960 | 1961 | 1962 | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Current Recefpts |  |  |  |  |  |  |  |
| Merchandise exports (adjusted). | 5,151 | 5,392 | 5,889 | 6,387 | 7,082 | 8,238 | 8,745 |
| Mubral aid to NATO countries | ${ }^{63}$ | 43 | 35 | ${ }_{4}^{41}$ | 23 | 47 | 39 |
| Gold production availsble for expout | 148 | 162 | 162 482 | 155 562 | ${ }_{609}^{164}$ | 145 662 | 138 747 |
| Travel expenditares. | 180 | $\stackrel{420}{171}$ | 213 | 202 | 230 | 832 | 310 |
| Freight and shipping | 420 | 442 | 486 | 509 | 563 | 644 | 673 |
| Inheritances and immigranta' | 109 | 102 | 104 | 124 | 151 | 169 | 211 |
| All other current receipts.. | 414 | 447 | 452 | 484 | 500 | 557 | 640 |
| Totals, Current Receipts | 6,876 | 7,179 | 7,823 | 8,464 | ,312 | 10,794 | 11,503 |
| Current Payments- |  |  |  |  |  |  |  |
| Merchandise imports (adjosted) | 5,572 | 5,549 | 5,716 | 6,203 | 6,579 | 7,587 | 8,627 |
| Travel expenditures. | 598 | 627 | 642 | 605 | 585 | 712 | 779 |
| Interest and dividend | 671 | 656 | 764 | 783 | 860 | 1.010 | 1,071 |
| Freight and shipping | 625 | 533 | 568 | 595 | 648 | 679 | 756 |
| Inheritances and emigrants | 165 | 184 | 176 | 175 | 185 | 201 | 211 |
| Officisl contributions | 72 | 61 | 56 | 36 | 65 | 69 | 92 |
| Mutual aid to NATO comnti | 63 | 43 | 35 | 41 | 23 | 47 | 39 |
| All other current paymen | 697 | 768 | 794 | 856 | 888 | 963 | 1,012 |
| Totals, Cutrent Paymen | 8,363 | 8,412 | 8,751 | 9,294 | 9,873 | 11,218 | 12,586 |
| Balance on merchandi | -421 | -148 | +173 | +184 | +503 | +701 | +118 |
|  |  |  |  |  |  |  |  |
| urrent Account Balanc | -1,487 | -1,233 | -828 | -830 | -521 | -424 | -1,083 |
| Caplital Account- |  |  |  |  |  |  |  |
| Direct investment in Cana |  |  |  |  |  |  |  |
| Direct inveatment abroad | +570 | +670 -50 | ${ }_{-80}^{+500}$ | $\underline{+505}$ | +280 | +270 -95 | $\pm$ |
| Canadian Securities- |  |  |  |  |  |  |  |
| Trade in outstanding issues | +202 | +54 | $+100$ | -51 | -131 | -21 | -202 |
| New issues | +709 | +448 | +548 | $+729$ | +984 | $+1,100$ | +1,209 |
| Retiremente... | -258 | -266 | $-301$ | -319 | -404 | -382 | -382 |
| Foreign security transactions............ | -34 | -19 | -35 | -65 | $+22$ | -52 | -84 |
| Canada (-).............. | +33 | +21 | $+30$ | +107 | +7 | - | -4 |
| Other long-term capital transactions | +42 | +71 | +108 | -113 | +14 | - | -104 |
| Change in Canadian dollar boldings of foreigners. . | +10 | +123 | -27 | -10 | +17 | +12 | +45 |
| Other short-term capital movement | +281 | +142 | $\pm 315$ | $+307$ | +13 | -45 | +482 |
| Net Capital Movement, Ecelusive of Changes in Oficlat Hokdlogs. | +1,476 | +1,194 | +1,218 | +285 | + 66 | +787 | +1,240 |
| Oflicial Holdings of Gold and Foreign EhehangeChange in official holdinge. | -70 | -39 | +229 | +537 | +60 | $+86$ | -11 |
| Change in net International Monetary Fund position. | +59 | - | 461 | -378 | +86 | +-277 | +168 |

## 19.-Current and Capital Account Transactions Between Canada and the United States, 1959-55

(Millions of dollare)

| Item | 1959 | 1960 | 1961 | 1962 | 1963 | 1964 | 1985 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cuprent Recefipts- |  |  |  |  |  |  |  |
| Merchandise exports (adjusted). | 3,191 | 3,040 | 3,213 | 3,767 | 3,970 | 4,396 | 4,993 |
| Gold production available for export | 148 | 162 | 162 | 155 | , 154 | 145 | ${ }^{138}$ |
| Travel expenditures. | 351 | 375 | 435 | 512 | 549 | 590 | 680 |
| Interest and dividend | 97 | 98 | 112 | 120 | 155 | 190 | 204 |
| Freight and shipping. ........... | 228 | 220 | 230 51 | 259 | 279 | 301 | 327 |
| All otber current receipts........ | 52 319 | 50 342 | 51 336 | 345 | 65 342 | 77 359 | ${ }_{393} 9$ |
| Totals, Current Recelipts | 4,386 | 4,28\% | 4,539 | 5,219 | 5,514 | 6,058 | 6,84 |
| Current Payments- |  |  |  |  |  |  |  |
| Merchandise imports (adjusted) | 3,727 | 3,713 | 3,828 | 4,205 | 4,458 | 5,204 | 6,034 |
| Travel expenditures. | 448 | 462 | 459 | 419 | 388 | 481 | 531 |
| Interest and dividends | 547 | 535 | 630 | ${ }^{656}$ | 727 | 850 | 919 |
| Freight and shipping. | 326 | 324 | 333 | 353 | 378 | 399 | 442 |
| Inheritances and emigrants' Iunds | 123 | 142 | 136 | 139 | 152 | 157 | 160 |
| All other current paymen | 436 | 470 | 494 | 539 | 559 | 002 | 632 |
| Totals, Current Pay | 5,607 | 5,646 | 5,880 | 6,311 | 6,652 | 7,093 | 8,718 |
| Current Account Balan | -1,221 | -1,365 | -1,341 | -1,092 | -1,148 | -1,435 | -1,912 |
| Capltal Account- <br> Direct Investment- |  |  |  |  |  |  |  |
| Direct investment in Canada | +428 | +461 | +366 | +328 | +220 | +188 | +353 |
| Direct investment abroad. | -10 | -18 | -25 | +6 | -36 | -35 | -70 |
| Canadian Securities- |  |  |  |  |  |  |  |
| Trade in outstanding issues | $+93$ | $+47$ | $+196$ | +73 | -64 | -14 | -155 |
| New issues. | +624 | +382 | +489 | +690 | +930 | +1,040 | +1,186 |
| Retirements. | -212 | -214 | -220 | -247 | -315 | $-300$ | - ${ }^{\mathbf{8 2}} \mathbf{2 8}$ |
| Foreign security tranaactions. | $-37$ | $+4$ | -7 | -55 | +25 | -41 | -72 |
| Other long-term capital transactions.......... | +41 | +84 | +154 | -115 | +83 | +175 | +68 |
| Change in Canadian dollar holdings of Ioreigners. Other short-term capital movements. | +8 | +59 +169 | +23 | +27 +368 | +7 | +16 +610 | + 10 |
| Other short-term capital movernents......... | +377 | +169 | +381 | +366 | -21 | +610 | -518 |
| Net Capital Movement | +1,312 | +974 | +1,311 | +1,*73 | +829 | +1,039 | +456 |
| Balance Settled by Exchange Transfers | -158 | +846 | +257 | +554 | +378 | +27 | +1,439 |
| Offletal Holdings of Goid and Forelsn ErchangeChange in holdinge. Other apecial international financial assistance. | $\square^{-67}$ | -39 | $\stackrel{+227}{-}$ | +538 -3 | $\pm 69$ | +31 | +43 |

20.-Current Acconnt Transactions Between Canada and Britain, 1059-85
(Millions of dollars)

| Item | 1959 | 1960 | 1961 | 1982 | 1983 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Current Receipts- |  |  |  |  |  |  |  |
| Merchandise exports (adjusted) | 782 | 924 | 924 | 924 | 1,017 | 1,219 |  |
| Travel expenditures. | 18 | 20 | 21 | 22 | 28 | ${ }_{80}$ | 34 |
| Interest and dividends. | 35 | 32 | 37 | 28 | +105 | +130 | 136 |
| Freight and shipping. ...... ${ }^{*}$ | 80 | 93 <br> 28 <br> 8 | 100 25 | $\stackrel{98}{28}$ | 105 43 | 130 | ${ }_{51}$ |
| Inheritances and immigrants* fu | 26 45 | $\stackrel{28}{58}$ | 25 54 | ${ }_{68}^{28}$ | ${ }_{77}$ | 102 | 110 |
| Totals, Current Receipt | 986 | 1,148 | 1,161 | 1,166 | 1,301 | 1,610 | 1,555 |
| Current Payments- |  |  |  |  |  |  |  |
| Merchandise importa (adjusted) | 618 | 611 | 593 | 578 | 521 | ${ }_{80} 88$ | ${ }_{89}^{62}$ |
| Travel expenditures. | 62 | 70 | 71 | 78 88 | 78 | 104 | 91 |
| Interest and dividends | 90 | 83 | 87 03 | 88 | 94 | 188 | 95 |
| Freieht and shipping............ | 88 | 89 25 | 93 23 | 18 | 15 | 24 | 30 |
| Alt other current paymento...... | 89 | 101 | 99 | 101 | 102 | 124 | 1:6 |
| Totaks, Current Payments. | 874 | 979 | 365 | 841 | 884 | 1,005 | 1,845 |
| Current Account Balante | +16 | +169 | +185 | +23 | +417 | +505 | +610 |

## Section 5.-Canada's International Investment Position*

Canada's balance of payments is influenced to a considerable extent by the size and character of its balance of international indebtedness, a phrase used in the broad sense generally accepted in balance of payments terminology to include equity investments as well as contractual borrowings. This is true not only through the servicing of capital involving interest, dividends and miscellaneous income payments, but also through the influences of foreign investment on the Canadian economy and on the shape and direction of its external demands.

Canada has been among the world's largest importers of private long-term capital. The very substantial capital formation which was a feature particularly of the 1950 s was associated with an unprecedented growth in the country's external liabilities. These investments contributed to a rapid rate of growth in the Canadian economy, particularly in the exploitation of natural resources, and added significantly to Canadian production, employment and income. At the same time they added substantially to the continuing burden of Canada's external debt and to the proportion of Canadian industry controlled by non-residents.

Canada's gross external liabilities amounted to $\$ 32,800,000,000$ at the end of 1964; non-resident-owned long-term investments in Canada had reached a book value of $\$ 27,400,000,000$ (in the two decades since World War II their value has quadrupled). The part of these investments in establishments controlled outside of Canada totalled $\$ 15,900,000,000$. In 1964 direct investments grew rather less rapidly than in earlier years. Investments in other Canadian equities, although smaller, have also been substantial and there have been periods in recent years of sharp increase in foreign holdings of Canadian bonds and debentures.

Investments of non-resident capital have been closely related to the high rate of growth in Canada and to the heavy demands placed on capital markets by this factor and by the financial needs of governments and municipalities. Large development projects have been initiated and financed by investors from other countries and the growth effects from this investment have, in turn, led to Canadian borrowing in capital markets outside of Canada. While capital inflows have been the principal source of the increased indebtedness abroad, another substantial contributor has been the earnings from non-resident-controlled branches and subsidiaries which were retained in Canada. New resource industries depending to a large extent on non-resident financing include all branches of the petroleum industry, iron ore, potash and other mining, aluminum, nickel, pulp and paper, and chemical industries. In addition, secondary industry has also benefited from non-resident investment.

Canada's gross external assets totalled $\$ 12,700,000,000$ at the end of 1964 and govern-ment-owned asseta made up a substantial part of that total. Canada's net balance of international indebtedness, including equity investments, at the same date was estimated at $\$ 20,100,000,000$, more than three quarters of which was incurred since 1950.

Foreign Investments in Canada.-Dependence upon external sources of capital for financing in periods of heavy investment activity has been characteristic of Canadian development. During the exceptional growth that occurred before World War I, nonresident investment was very high and the main source of that investment was London.

[^359]However, during the first part of the inter-war period, the United States became the principal source of external capital and by 1926 the portion of Canada's international debt owned in that country exceeded that owned in Britain. With some interruption during the 1930s, United States investment in Canada continued to increase, particularly after 1947 when the period of intense activity in the petroleum industry got under way. Over hali of the United States investment in Canada at the end of 1964 was accumulated since 1955. At $\$ 21,443,000,000$, United States investments in the later year continued to represent more than three quarters of all non-resident investments in Canada and made up 80 p.c. of the increase since 1955. The main rise occurred in direct investments in companies controlled in the United States, which almost doubled in the 1955-64 period. In the same period, portfolio investments in Canada owned in the United States more than doubled, due mainly to large sales of new issues of securities made in that country.

British investments in Canada totalled $\$ 3,463,000,000$ at the end of 1964 and accounted for only about 13 p.c. of the total non-resident investments in Canada compared with 36 p.c. at the end of 1939 before most of the wartime repatriations. After reaching a low point in 1948, the value of British investments in Canada increased each year to 1962, decined slightly in 1963, partly as a result of Canadian repatriation of inveatments in railways and other utilities, and increased again in 1964.

Investments of countries other than the United States and Britain reached a record total of $\$ 2,448,000,000$ at the end of 1964 . Exceeding three times the 1954 figure, this represented a much higher rate of increase than had occurred in either United Statea or British investments, and large increases had taken place in portfolio holdings of securities as well as in direct investments. At about 9 p.c. of the total, compared with 6 p.c. in 1954, this group of countries, mostly in Western Europe, accounted for a slightly smaller proportion of total foreign investments than in 1960,1961 and 1962 . Over 90 p.c. of the direct investments, which totalled $\$ 1,044,000,000$ in 1964, also came from Western Europe; about one quarter was of Netherlands origin, with Belgian, French, Swiss and German investments making up the next largest groups.

The degree of dependence upon non-resident capital for financing Canadian investment has been relatively much less in the postwar period than in the earlier periods of exceptional expansion, even though the rise in non-resident investments has been so great. Thus, from 1950 to 1953 both the net use of foreign resources and direct foreign financing amounted to about one seventh of net capital formation in Canada. But from 1958 to 1961 when these ratios had increased considerably to 34 p.c. and 47 p.c., respectively, they were still less than the corresponding ratios in the 1929 to 1930 period when inter-war investment activity was at its higheat point. In that shorter period more than one half of net capital formation was financed from outside of Canada, and in the period of heavy investment before World War I an even larger ratio of investment was financed by external capital. After 1961 these ratios declined somewhat; from 1962 to 1965 the net use of foreign resources comprised 19 p.c. of net capital formation in Canada and direct foreign financing 43 p.c. In considering these changes it should be noted that for a decade and a half, between 1934 and 1949, Canada was a net exporter of capital and that Canadian assets abroad have been rising over a long period.

It should also be noted that the above ratios relate to the place of non-resident investments in all spheres of development including those where Canadian sources of financing
predominate such as in merchandising, agriculture, housing, public utilities and other forms of tocial capital. Thus, non-resident financing of manufacturing, petroleum and mining has been much higher than the over-all ratios indicate and has provided the major portion of the capital investment in this field in the period since 1948. The most recent comprehensive calculation of the ratios of non-resident ownership in Canadian manufacturing, mining and petroleum is for the year 1963 and it should be noted that subsequent changes may have increased non-resident ownership even more. In that year the Canadian manufacturing industry was 54 p.c. owned by non-residents but capital subject to foreign control was 60 p.c. These proportions compared with 47 p.c. and 51 p.c., respectively, as recently as the end of 1954. In the field of petroleum and natural gas, non-resident ownership and control amounted to 64 p.c. and 74 p.c., respectively, at the end of 1963 , whereas at the end of 1954 non-resident ownership and control had amounted to 60 p.c. and 69 p.c., respectively; in mining and smelting, non-resident ownership and control amounted to 62 p.c. and 59 p.c., respectively, compared with 53 p.c. and 51 p.c. in 1954. However, resident-owned Canadian capital continued to play a leading role in the financing of such areas of business as merchandising, railways and other public utilities. Hence, non-resident ownership in a broad range of business activity, including manufacturing, petroleum, mining, merchandising and railways and utilities, rose only slightly from 32 p.c. in 1948 to 35 p.c. in 1963. But, in the same years, companies subject to non-resident control increased from 25 p.e. to 34 p.c. their share of the total even in this broad area of business, a trend also evident in many subdivisions of the manufacturing and extractive industries.

Another basis of judging the place of foreign-controlled business in Canadian industry is provided by a special study of production and employment in the larger Canadian manufacturing establishments controlled by non-residents. The enterprises baving an investment in Canada of $\$ 1,000,000$ or more accounted for about 40 p.c. of Canadian manufacturing production in 1961 and 29 p.c. of employment in that field. About 33 p.c. of Canadian manufacturing production and 22 p.c. of employment originated with United States-controlled plants. These ratios in United States-controlled plants were considerably higher than in 1953 -the previous year for which a study of this kind was made. In some industries the proportions of production and employment in plants controlled by non-residents were much higher than this. Automobiles, for example, are mainly produced in United States-controlled plants, but this is exceptional. Other industries in which well over one half of the production is in non-resident-controlled firms include the smelting and refining of non-ferrous metals, petroleum refining, motor vehicle parts, aircraft and parta, and industrial chemicals. In several major industries like fruit and vegetable canning and preserving, and miscellaneous machinery and equipment manufacturing the distribution of control between Canadian and foreign-controlled companies is more even. In such industries as pulp and paper mills and miscellaneous food manufacturing, the non-resident share is large although less than one half of the total.

There are, however, many industries where the largest part of production is in Cana-dian-controlled plants. Prominent among these are such important branches of industry as iron and steel mills, sawmills, feed manufacturing, clothing, and such divisions of the food and beverage group as bakeries, slaughtering and meat packing plants, pasteurizing and butter and cheese plants.
21.-Estimate of the Canadian Balance of International Indebtedness, as at Dee. 31, 195-41

Note.-Totals are rounded and may not represent the sum of their components.
(Billions |'000 millions] of dollars)

| Item | 1945 | 1949 | 1959 | 1960 | 1061 | 1962: | 1963r | 1964 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Camadian Liabilitles- |  |  |  |  |  |  |  |  |
| Direct investmenta... | 2.7 | 3.6 | 11.9 | 12.9 | 13.7 | 14.7 | 15.4 | 15.9 |
| Government and manicipal bonds | 1.7 | 1.8 | 3.1 | 3.3 | 3.4 | 3.7 | 4.2 | 4.7 |
| Other portfolio investments | 2.4 | 2.3 0.3 | 4.6 1.3 | 4.5 1.4 | 1.7 1.7 | 4.7 1.8 | 4.7 1.8 | 4.7 |
| Foreign Long-Term Investments in Canada | 7.1 | 8.0 | 20.9 | 22.2 | 23.6 | 24.9 | 28.1 | 27.4 |
| Equity of non-residents in Canadian assets abrosd. <br> Canadian dollar holding of non-reeidents | 0.2 0.3 | 0.3 0.4 | 1.0 0.5 | 1.1 0.6 | 1.2 0.6 | 1.3 | 1.4 0.6 | 1.6 0.6 |
| Gross Llablities ${ }^{1}$ | 7.6 | 8.7 | 22.4 | 24.6 | 25.4 | 26.8 | 28.1 | 23.5 |
| United States: | 5.4 | 6.4 | 17.0 | 18.0 | 19.3 | 20.6 | 22.0 | 23.1 |
| Britainl. | 1.8 | 1.8 | 3.4 | 3.5 | 3.5 | 3.6 | 3.5 | 3.6 |
| Other countries, ${ }^{\text {a }}$ | 0.4 | 0.5 | 2.1 | 2.4 | 2.5 | 2.6 | 2.6 | 2.8 |
| Short-term payables | 0.6 | 0.6 | 1.4 | 1.8 | 1.9 | 2.0 | 2.3 | 3.24 |
| Gross Liabilities | 8.2 | 9.3 | 23.8 | 25.6 | 27.3 | 28.8 | 30.4 | 32.8 |
| Canadian Assets- |  |  |  |  |  |  |  |  |
| Direct investments. | 0.7 | 0.9 | 2.3 | 2.5 | 2.6 | 2.8 | 3.1 | 3.4 |
| Portiolio investments. | 0.6 | 0.6 | 1.2 | 1.3 | 1.5 | 1.7 | 1.8 | 1.8 |
| Government of Canada credite. <br> Government of Cansda subscriptions to international investment agencies. | 0.7 | 2.0 0.1 | 1.5 0.1 | 1.5 0.1 | 1.4 0.1 | 1.3 0.1 | 1.3 0.1 | 1.5 0.1 |
| Miscellaneous investments ${ }^{\text {a }}$. . . . . . . . . . . | - | - | - |  | 0.1 | 0.2 | 0.3 | 0.4 |
| Canadian Long-Term Investments Abrosd | 2.0 | 3.6 | 5.0 | 5.3 | 5.7 | 6.2 | 6.6 | 7.3 |
| Government of Canada boldings of gold sud loreign exchange. <br> Net IMF position. <br> Other Canadian shortaterm holdinge of exchange. <br> Gross Assets ${ }^{1}$ | 1.7 | 1.2 | 1.8 | 1.8 | 2.2 | 2.7 | 2.8 | 2.9 |
|  | - | 0.1 | 0.1 | 0.2 | 0.2 | $-0.1$ | -0.1 | 0.2 |
|  | 0.1 | 0.1 | 1.0 | 1.2 | 1.1 | 1.0 | 1.3 | 1.8 |
|  | 3.9 | 5.1 | 8.0 | 8.5 | 9.2 | 9.8 | 16.6 | 12.2 |
| Government of Canads holdings of gold, foreign exchange and net IMF position.. | 1.7 | 1.3 | 1.9 | 2.0 | 2.4 | 2.6 | 2.7 | 3.1 |
| United States ${ }^{\text {c }}$. . . . . . . . . . . . . | 1.0 | 1.3 | 3.3 | 3.7 | 3.9 | 4.1 | 4.7 | 4.9 |
| Britain ${ }^{1}{ }^{4} \ldots .$. | 0.7 | 1.6 | 1.4 | 1.5 | 1.5 | 1.6 | 1.9 | 3.6 1.6 |
| Other conntries 1.2 | 0.5 | 0.9 0.2 | 1.3 0.5 | 1.3 | 1.4 | 1.5 | 1.3 | 1.6 0.4 |
| Gross Assets. | 4.6 | 5.3 | 8.5 | 9.0 | 9.7 | 10.3 | 11.1 | 12.7 |
| Canadian Net International indebtedness-Net Labillties. . . . . . . | 4.2 | 4.4 | 15.3 | 16.6 | 17.4 | 18.6 | 19.3 | 20. 1 |
| Government of Canada holdinge of gold, foreign exchange and net IMF position. United Statest 6 | -1.7 | -1.3 | -1.9 | -2.0 | -2.4 | $-2.6$ | $-2.7$ | $-3.1$ |
|  | 4.4 | 6.1 | 13.6 | 14.3 | 15.4 | 16.5 2.0 | 1.8 | 1.0 |
|  | -1.1 | 0.2 -0.4 | 1.9 0.8 | 2.0 1.1 | 2.0 | 2.9 1.1 | 1.6 | 1.2 |
|  | -0.1 | -0.4 0.4 | 0.8 1.0 | 1.1 1.1 | 1.4 | 1.1 | 1.8 | 3.8 |

[^360]22.-Foreign Capital Invested in Canada, by Type of Investment, as at Dec. 31, 1945-64
(Millions of dollars)

| Type of Investment | 1945 | 1951 | 1959 | 1960 | 1961 | 1962 | 1963 r | 1964 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |  |  |
| Federal. | 726 | 1,013 | ${ }_{58}^{612}$ | 611 | -657 | 788 | 889 | -897 |
| Provincial | 624 | 771 | 1,585 | 1,632 | 1,743 | 1,862 | 2,217 | 2,564 |
| Municipal. | 312 | 319 | 915 | 1,026 | 1,038 | 1,087 | 1,091 | 1,221 |
| Totals, Government Securities | 1,662 | 2,103 | 3,112 | 3,269 | 3,438 | 3,737 | 4,207 | 4,682 |
|  |  |  |  |  |  |  |  |  |
| Other (excluding pipelines and public enterprises). | 493 | 524 | 739 | 743 | 656 | 691 | 590 | 605 |
| Totals, Public Utilit | 2,092 | 1,960 | 2,144 | 2,149 | 2,022 | 1,961 | 1,821 | 1,841 |
|  |  |  |  |  |  |  |  |  |
| Petroleum and natural gas................. | 160 | 693 | 3,455 | 3,727 | 4,029 | 4,384 | 4,703 | 4,786 |
| Other mining and smelting | 356 | 586 | 1,783 | 1,977 | 2,094 | 2,297 | 2,347 | 2,473 |
| Merchandising. | 220 | 377 | 878 | 872 | 917 | 972 | 1,003 | 1,092 |
| Financial. | 525 | 595 | 2,190 | 2,380 | 2,616 | 2,688 | 2,847 | 2,503 |
| Other enterpris | 70 | 120 | 284 | 297 | 348 | 366 | 361 | 408 |
| Miscellaneous investments | 284 | 328 | 1,285 ${ }^{1}$ | 1,428 | 1,696 | 1,753 | 1,771 | 2,037 ${ }^{2}$ |
| Totals, Investment | 7,092 | 9,477 | 20,857 | 22,214 | 23,606 | 24,889 | 26,134 | 27,354 |
| United States ${ }^{\text {3 }}$ | 4,990 | 7,259 | 15,826 | 16,718 | 18,001 | 19,155 | 20,479 | 21,443 |
| Britain ${ }^{\text {a }}$ | 1,750 | 1,778 | 3,199 | 3,359 | 3,381 | 3,399 | 3,331 | 3,463 |
| Other countries | 352 | 440 | 1,832 | 2,137 | 2,224 | 2,335 | 2,324 | 2,448 |

${ }^{1}$ New series. ${ }^{2}$ Includes $\$ 273,000,000$ of Columbia River Treaty receipts. ${ }^{3}$ Includes some investments held for residents of other countries.

## 23.-Foreign Capital Invested in Canada, by Type of Investment, classified by Estimated Distribution of Ownership, as at Dec. 31, 1964

Note.-Common and preferred stocks are at book values as shown in the balance sheets of the issuing companies; bonds and debentures are valued at par; and liabilities in foreign currencies are converted into Canadian dollars at par of exchange.

| Type of Investment |
| :--- | ---: | ---: | ---: | ---: | ---: |

[^361][^362]Canadian Assets Abroad.-Although there has been a great growth in non-resident investment in Canada and in the balance of indebtedness of other countries, it will be noted that Canadian assets abroad, shown in Tables 21, 24 and 25, have continued to rise in value. These now equal a larger proportion of liabilities abroad than was the case before World War II, but more than one quarter of the increase since then has been in govern-ment-owned assets such as the official reserves and the loans by the Canadian Government to other governments which were extended during the war and early postwar years. At the end of 1964 the government credits outatanding had a value of $\$ 1,517,000,000$ while official holdings of exchange and Canada's net IMF position amounted to some $\$ 3,100,000,000$ in terms of Canadian dollars. Other official Canadian assets include Canada's subscriptions to the capital of the International Bank for Reconstruction and Development, the International Development Association and the International Finance Corporation which, by March 1965, amounted to $\$ 80,500,000, \$ 40,700,000$ and $\$ 3,500,000$, respectively; these were partly offset by liabilities to these institutions.

The portion of the assets in private investments, particularly in the form of direct investments abroad by Canadian companies, is still small in relation to the corresponding non-resident stake in equities in Canada. Private long-term investments abroad by Canadians in 1964 were made up of direct investments of $\$ 3,356,000,000$ and portfolio investments of $\$ 1,932,000,000$. About two thirds of the privately owned investments were located in the United States. Direct investments in that country by Canadian businesses have grown rapidly and are found in many fields, among which the beverage and farm implement industries are particularly noteworthy.

Private investments in overseas countries are widely distributed. Somewhat more than one half of the total in 1964 were located in Commonwealth countries, with slightly more in Britain than in the remainder of the Commonwealth. Most of the direct investments in Britain were in industry, while in other Commonwealth countries investments in mining were of almost equal importance with those in industry. In foreign overseas countries the largest part was in the countries of Latin America where Canadian holdings in public utilities are substantial.

## 24.-Canadian Long-Term Investments Abroad, 1949-64

Note.-Excludes investments of instrance companies and banks (beld mainly against liabilities to non-residents), Canads's subscriptiong to international investment agencies, and miscellaneous investments (Table 21). Holdinzs of atocks are at book valuea as shown in the bcoks of issuing companies; holdings of bonds are shown at par valuen. Fortign currencies gre converted into Canadian dollars at current market rates. The series for portfolio iovestment was reconstructed in 1952 and is not strictly comparable with preceding years.
(Millions of dollars)

| Assets | 1949 | 1056 | 1959 | 1960 | 1961 | 1962 | 1963 r | 1884 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Direct investmenta in busiresses outaide Canada. | 926 | 1,891 | 2,295 | 2,481 | 2,628 | 2,821 | 3,125 | 3,356 |
| Portfolio holdings of foreign securities | 638 | 1.006 | 1,183 | 1,315 | 1,471 | 1,723 | 1,796 | 1,932 |
| Government credits | 2,000 | 1,587 | 1,495 | 1,462 | 1,424 | 1,30t | 1,285 | 1,517 |
| Totals | 3,564 | 4,484 | 4,973 | 5,258 | 8,523 | 6,845 | 6,206 | 6,8*5 |

## 25.-Canadian Long-Term Investments Abroad, by Location, as at Dec. 31, 1964

Nore.-See headnote to Table 24.

| Location of Investment | Direct Investments | Portfolio Investments |  | Government Credits | Total Investments |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Stocks | Bonds |  |  |
|  | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 |
| United States. | 2,025 | 1,327 | 118 | 219 | 3,689 |
| Britain..... | 457 | 55 | 15 | 1,059 | 1,586 |
| Other Commonwealth countries. | 426 | 14 | 32 | 25 | 497 |
| Other foreign countries........ | 448 | 246 | 125 | 214 | 1,033 |
| Totals. | 3,356 | 1,642 | 290 | 1,517 | 6,805 |

# Section 6.-Government Economic Planning Agencies 

## Subsection 1.-The Economic Council of Canada

The Economic Council of Canada, a Crown corporation established by Act of Parliament (SC 1963, c. 11) assented to on Aug. 2, 1963, is an independent economic advisory body with broad terms of reference. Its research, analysis and recommendations on a wide range of economic and social matters are designed to help governments and private groups in developing their own longer-term plans, programs and policies. The Council consists of 28 members appointed by the Governor in Council. Included are a chairman and two directors who serve on a full-time basis in their capacity as professional economists, and 25 part-time members who are representative of industry, labour, finance and commerce, agriculture and of other primary industries, and the general public. There are no officials or representatives of government among its members and the Council has no executive or administrative functions.

The central features of the Council's duties are "to advise and recommend how Canada can achieve the highest possible levels of employment and efficient production in order that the country may enjoy a high and consistent rate of economic growth and that all Canadians may share in rising living standards; to recommend what government policies
will best help to realize the potentialities of growth of the economy; to consider means of strengthening and improving Canada's international financial and trade position; to study how national economic policies can best foster the balanced economic development of all areas of Canada " Such duties, and others stated in the Act, encompass the basic economic and social goals that have come to be widely accepted in all modern states. These aims usually are briefly stated as full employment, a high rate of economic growth, reasonable stability of prices, a viable balance of payments, and an equitable distribution of rising incomes. Since the Second World War, in a period of accelerating change, the consistent and simultaneous achievement of such objectives has become a major preoccupation of public policy. An increasing number of countries have sought to develop special procedures and machinery to facilitate the attainment of such goals. The creation of the Economic Council of Canada is a part of this development.

In its First Annual Review* the Council stated its underlying philosophy of approach in this way:-
"We are concerned not with the question of inventing new forms of intervention, but rather with ordering and developing our policies and social programmes in a rational and coherent manner designed to accomplish consistently what the society has declared to be its economic and social goals. For this purpose it is essential to bring to bear the needs of the future on the decisions of today. This applies not only to decisions by governments but also to decisions in the private sector of the economy."

[^363]In examining the potentialities of the Canadian economy to 1970, the Council in its First Annual Review said that the most striking single feature is the tremendous increase in Canada's labour force. The rate of increase in the 1965-70 period is expected to average 2.6 p.c. a year-a rate several times that anticipated in most European countries and well over that in prospect for the United States. Numerically, the Canadian increase would total about $1,000,000$ workers in the $1965-70$ period. This tremendous labour force growth was considered by the Council in the light of the goal of full employment. In no country does this goal mean that everyone in the labour force must be employed; there is always some voluntary unemployment as well as some that is unavoidable as workers move from one job to another. The Council concluded that 3 p.c. unemployment as an average annual rate would be a practical, realistic objective to be aimed at over the remainder of the 1960s, although it stressed that improved manpower policies (including better labour mobility and higher levels of education and skills) would make it possible to aim at a higher employment potential over the longer term. To attain the "full employment" objective in the face of the large labour force increase, Canada would require a net addition of $1,500,000$ jobs in the seven-year period ending in 1970 . This is approximately the same gain in total employment that occurred over the previous 14 years.

The Council also placed strong emphasis on increased efficiency-on sustained advances in productivity, which are the essence of economic growth and the real source of improvements in average living standards. Basing its judgment on postwar trends, the Council estimated that, with a reduction of the degree of slack existing in the economy in 1963, output per person employed would increase at an average rate of 2.4 p.e. a year over the period to 1970 . This productivity potential was combined with the very rapid rate of expansion required in employment, averaging approximately 3 p.c. a year to 1970 , to indicate a potential average rate of growth of output of 5.5 p.c. a year in real terms-that is, in terms of volume, after adjustment for price changes. The Council emphasized that its calculations of potential output to 1970 did not represent forecasts of anticipated trends but rather reasoned appraisals of consistent possibilities for the future. The achievement of such an average annual rate over the whole 1963-70 period would mean an aggregate increase of 50 p.c. in total real output and an increase of over 20 p.c. in real per capita income.

Examining the goal of reasonable stability of prices, the Council said that rates of change in prices and costs to 1970 within Canada's flexible market system should be contained within the limits of the range of movements over the decade from 1953 to 1963. Over this decade, for example, the average annual increases in consumer prices and in prices of all goods and services produced in Canada were 1.4 p.c. and 2.0 p.c., respectively, with some moderate year-to-year varistions around these rates.

A "viable balance of payments" was taken by the Council to mean not merely the maintenance of a capability for attaining adequate total international receipts to cover international payments, but also to mean a strengthening of Canada's international economic position in the sense that the possible current account payments deficit (which might be of the order of $\$ 1,500,000,000$ to $\$ 2,000,000,000$ at potential output in 1970) would be lower in relation to total output (and also that the corresponding net capital inflow would be smaller in relation to domestic investment) than has been the case under comparable past conditions of rapidly rising domestic activity. In short, such a performance would call for some improvement in the basic competitive posture of the Canadian economy.

To meet its interrelated goals and targets, the Council called for an appropriate combination of expansionary measures and policies in the fiscal, monetary and trade fields. In particular, the achievement of its goals would require Canada to participate fully in the new possibilities for an expansion of world trade. There was also a requirement for more adequate measures to facilitate the necessary mobility of productive resources from declining to expanding situations within a rapidly changing economy.

## Economic Performance in Relation to Goals

The goals and objectives originally set by the Council have been reviewed in two subsequent Annual Reviews.* Although some of the underlying projections in setting these goals were altered slightly by actual developments in the intervening period, the Council believed that as of early 1967 the over-all goals were still valid as standards for messuring many aspects of Canadian economic performance. In its Fourth Annual Review, to be published in the fall of 1967, the Council will examine potential output to 1975, and project likely population and labour force changes to 1980.

In its Third Annual Review, published in the fall of 1966, the Council said that, while the economy could move slightly away from several of its goals in the near-term future, the underlying situation still displayed indications of sufficient basic atrength and balance to make it unlikely that the country faced the danger of a prolonged or major departure from the goals. The gap between actual and potential output had been virtually eliminated by early 1966. The pace of expansion subsequently moderated, bringing about a more comfortable balance between total demand and supply. However, the Council said that over-all demand forces could re-emerge strongly after a relatively brief interval and, with little or no slack left in the economy, the situation could become one of greater exposure to the dangers of general price and cost increasea in the latter half of the 1960 s than earlier.

Production.-Total output in Canada forged ahead strongly through 1963, 1964, 1965 and the early part of 1966 . The economy achjeved an average annual rate of growth of over 6 p.c. a year in the volume of total output during that period. Deapite the subsequent moderation in this rapid growth rate, the Council emphasized that the potential for further sturdy growth of output was relatively high for the medium-term future. An average annual rate of increase in the total volume of output of close to 5 p.e. from 1966 to 1970 was estimated to be required to attain potential output by the end of the decade.

Employment.-In less than four years, from early 1963 to the latter part of 1966, there was an expansion of close to $1,000,000$ jobs in Canada. This was a larger absolute increase than occurred in the whole of the 1950s. Unemployment declined from $5 \frac{1}{2}$ p.c. in 1963 to less than 4 p.e. toward the end of 1966 . Meanwhile, the labour force grew very rapidly and a further increase of 10 p.c. was envisaged by the Council for the 1966-70 period, implying a need for about 750,000 additional jobs over the four-year period. In these circumstances, the Council observed, unemployment could re-emerge very strongly and very quickly if a reasonably strong growth in total demand and output were not maintained over the remainder of the decade.

Prices and Costs.-Throughout the world there has been a general and widespread pattern of price increases in recent years. In Canada, consumer prices rose at an average annual rate of about 2.1 p.c. from 1963 to 1965 , then accelerated at a rate of close to 4 p.c. a year in 1966. Within the over-all index, the rate of increase in food prices was about double that of consumer services and more than triple that of non-food commodities in 1966. Although food accounts for only about 25 p.c. of the market "basket" used in compiling the over-all index, price increases in the food component accounted for close to one half of the increase in the total index over 1966. Meanwhile, labour costs per unit of output in Canadian manufacturing moved up slightly, relative to those in the United States. In Canada these costs in 1966 were back to the 1960 level. In both countries such costs were less than 5 p.c. above their 1953 levels, however. This contrasts with considerable increases in most other industrially advanced countries. If Canadian unit labour costa in manufacturing are adjusted for the devaluation of the dollar in the early 1960 s , then such costs have fallen substantially relative to U.S. costs. Part of this com-

[^364]petitive advantage still remained in 1966, although it has been eroded somewhat by developments since 1964. Surveying increases in basic wage rates over 1966, the Council found that they had been more rapid than at any time in the past decade. Higher costs therefore would continue to work their way through the Canadian economic system for some time. Thus, regardless of underlying economic conditions, it appeared to be inevitable that further aignificant increases in many lagging prices and costs would continue in Canada in the near-term future.

Productivity.-If anything, the rate of increase in Canadian productivity has tended to slow down in recent years. In setting its 1963-70 goals, the Council drew on historical experience that indicated that the economy would achieve an especially rapid rise in non-farm productivity as the gap between actual and potential output was closed. The rise that actually occurred in the 1963-66 period did not measure up fully to the Council's expectations. Nevertheless, the rise in non-farm productivity since 1963 was well above the performance of the late 1950s and also well above the long historical trend. The need in Canada for even greater increasea has been emphasized repeatedly by the Council. Gains in productivity are the real basis of increases in the standard of living.

Investment.-An extraordinarily large rise in new investment took place in Canada in 1963-66. While total economic output over that period rose by about one third in value and one fifth in volume, total investment spending rose nearly two thirds in value and over two fifths in volume. This expansion took place over a very broad front of new machinery and equipment, business non-residential construction, and government social capital spending. But, despite this, the growth in Canada's productive capacity seems to have been less than the growth in the volume of output. In addition, by 1966, demand pressures on productive resources and capacity created particularly severe strains in the construction industry, especially in certain regions and localities, and this led to worsening bottlenecks and to escalating wage and cost pressures.

## Prosperity and Price Stability

The Canadian experience in the prolonged expansion that began in 1961 serves well to illustrate one of the major, recurrent difficulties faced by modern industrial nations in the postwar period-namely that of achieving reasonable price stability in periods of high growth and rapid gains in employment. In general, the leading nations have demonstrated far better performance in this respect over the past 15 years than in the inter-war period. Much of this improvement can be attributed to a better public understanding of the broad forces at work within modern economies, and to better use of the policies capable of influencing these forces. In particular, there has been a growing appreciation of the importance of total supply and demand within economies and of the role of the "big levers" of fiscal and monetary policy in affecting these aggregates. It is realized that aevere inflation is brought about fundamentally by excessive pressure of total demand for goods and services on the available supply, while heavy unemployment is the result of large relative deficiency in demand. It is known that the principal remedy for both of these extreme conditions is the operation of fiscal and monetary policy to restrain or stimulate the growth of total demand as the case may be, and bring it back into a proper relationship with the growth of potential output.

In 1965, the Government of Canada requested the Economic Council to launch a broad exarnination into prices, costs, incomes and productivity, and their relationship to sustained economic growth. Specifically, the Council was requested to (1) study factors affecting price determination and the interrelation between movements in prices and costs and levels of productivity and income; (2) to report on the relationship to sustained economic growth and to the achievement of high levels of employment and trade and rising etandards of living; and (3) to review the policies and experiences of other countries in this field and their relevance for Canada. A substantial part of the Council's Third Annual Review was devoted to its report on these matters.

In attempting to reconcile the goals of high employment and reasonable price stability, many countries have adopted what are known as "incomes policies" or "wage-price guidelines" The ways in which these policies and other measures were developed and used in the United States, Britain, France, Sweden and the Netherlands were studied at length by the Council. In general, the Council found that these policies-which in many cases relate permissible price increases to recent levels of productivity-had some educational value but were seldom enforceable without the use or threatened use of government sanctions against parties who violate the guidelines. The effect of such policies was extremely difficult to measure. The Council's study indicated that once an economy is operating at high levels of demand and employment, wage and price increases tend to break through whatever guidelines have been established. Wage-price explosions have often followed periods of comparative stability attributed to incomes policies.

The Council concluded that this type of poliey is not well suited to Canadian circumstances. An incomes policy would have the best chance of success in a unitary state, with strong central powers, a tradition of government intervention in the detailed functioning of the economy, and few constitutional impediments to government use of direct controls if necessary; private economic power would be relatively concentrated, and both union and management organizations would be strong and centralized. Obviously, Canada is far indeed from being such an environment. The threat of resort to direct wage and price controls as sanctions would be a hollow threat in Canada; the Federal Government has not now the power to institute such controls in major areas of the economy and in practice has been able to get such constitutional power only in wartime. In addition, regional differences hardly favour such a policy in Canada. Another factor weighing against such a policy is Canada's increasing economic interdependence. Price-increasing developments in international markets-where prices for a wide range of Canadian products are deter-mined-might be bringing about rapid rises in profits and incomes in a number of primary exporting industries, and little could be done about it except to explain to the public why the situstion must be tolerated.

The main thrust of the Council's recommendations, therefore, was along the lines of improving the use of basic monetary and fiscal policies, better planning of government expenditures and programs, lessening market rigidities, strengthening competitiveness, promoting greater mobility of resources, including manpower, removing inequities and enlarging public understanding of all these matters. Said the Council: "We feel that for all their troubles and imperfections-for all the static and turbulence which they periodically generate-the essentials of the institutions of free collective bargaining and of Gexible and relatively decentralized determination of wages and prices should be preserved. In the long run, they seem likely to be more compatible with good all-round performance by the Canadian economy than any visible alternative."

The Council found that, in the past, Canada's use of fiscal and monetary policies has often been too closely geared to minor, short-term economic fluctuations. They could be used more effectively to stabilize larger economic fluctuations over longer periods-to moderate prolonged pressure against resources, or reduced persistent economic slack. Within this setting, the Council added, further conditions are vital-favourable international conditions, a correct setting of the exchange rate, and adequate complementary policies to improve the supply side of the Canadian economy. The Council found that up to now there has been a relative neglect in Canada of policies to increase supply, both in general and in areas of particular pressures.

One of the main problem areas detected by the Council was that of construction spending. In the postwar period, such spending has showa a special and unique potential for aggravating or even inducing economic instabilities, with consequent repercussions on general costs and prices. Over the past 15 years demand for construction in Canada has ewung widely-residential building from a 25 -p.e. increase in one year to a 17 -p.c. decline two years later, non-residential construction from plus 40 p.c. to minus 9 p.c. over two years, and government construction outlays from plus 32 p.e. to minus 7 p.c. from one year to
the next. The Council said governments must be assigned a major contributing role as a destabilizing element in the over-all construction situation. In all three construction booms since 1950, outlays by all levels of government have reinforced and aggravated the excessive demand on the construction industry. Moreover, in the three recessions since 1950, government construction outlays have declined, adding to the weakness of demand in other sectors of the economy. In the 1963-66 period, demands on the construction industry pressed very hard on its supply capacity. The result was sharply higher wages in construction, strong increases in building materials prices, sharply higher bid prices on new contracts, increases in costs and prices on projects already under way, and fewer bids per construction contract. In such a situation, cost and price increases spill over into a broad front of labour and material resources.

The Council said that, to help stabilize construction demand, it would be appropriate to press for the development of business attitudes encouraging longer-term planning of business investment expenditures. However, the Council also strongly recommended steps to smooth out the growth of government-determined construction. This recommendation applied to all levels of government but the Council believed that the leadership must come from the Federal Government. The Council said that much of the need for government construction is foreseeable for some years ahead and there is room for better government planning and scheduling of such projects in relation to medium-term economic prospects and the likely demand-supply situation in the construction industry in key areas. Within the Federal Government itself, the Council saw a need for greater centralization of information and decision-making about construction expenditures.

The following were among the Council's other conclusions in this area:-
In the interests of better public education and information regarding current economic developments, including those in the field of prices, costs and incomes, steps should be taken to establish an independent institute of economic research along the innes of those already existing in many other countries. A major function of such an institute would be the publication of a regular bulletin containing analysis of short-term developments in the Canadian economy and other articles dealing with significant changes and problems.

A further examination is needed of problems of consumer protection and the exercise of market power in the Canadian economy. The emphasis should be on a consistent and continuous set of policies, based on well-founded and well-understood principles. (The Federal Government recently referred these matters to the Council for special study. The terms of reference are: 'In the light of the government's long-term economic objectives, to study and advise regarding (a) the interests of the consumer particularly as they relate to the functions of the Department of the Registrar General; (b) combines, mergers, monopolies and restraint of trade; (c) patents, trademarks, copyrights and registered industrial designs" The Council's work on this special study was well under way in the early part of 1967.)

Much more basic economic research needs to be done on problems relating to prices, costs, incomes and productivity in the Canadian economy. More adequate resources should be made available for these and other areas of economic research. In addition. there is a general and immediate need for improvements in price and other economic statistics. For this purpose, the Dominion Bureau of Statistics should be substantially strengthened.

In the light of underlying factors which have significantly altered the world and the Canadian food situation, and some of which are likely to continue for some time, it is more than ever important that effective measures be taken to increase productivity at all stages of food production and distribution.

Governments should take immediate steps to improve the discharge of their responsibilities as major employers and increasingly large-scale direct participants in the process of collective bargaining. The object should be to develop sound criteria and principles and to avoid disturbing repercussions on the climate of collective bargaining in the private sector of the economy.

Programs for productivity improvement and adequate measures for dealing with the manpower problems arising from technological and other change should be pressed ahead with all possible speed. The programs should operate both at the general and at the
industry and plant level. (In early 1967, the Council published a set of principles to guide labour and management in their efforts to cope with the manpower implication of technological and other changes in industry [see below].)

The annual autumn meetings between federal and provincial finance ministers and treasurers should be developed into a major vehicle for the improvement of longer-term planning and the better co-ordination of expenditure programs and other fiscal matters by the three levels of government. A number of basic economic documents should be published prior to such meetings to serve not only as background for them but also as a basis for stimulating broader public debate about economic developments, problems and potentialities in advance of the formulation of annual budget policies. A standing committee on economic affairs from the Senate and the House of Commons should be established, one of whose functions would be to hold annual bearings on economic issues arising out of the above-mentioned documentation and discussion.

## Education and Economic Growth

The basic role of education as a factor contributing to economic growth and rising living standards was stressed in the Council's First Annual Review, especially in the discussion of Canada's vital need for creating and maintaining an adequate supply of professional, technical, managerial and other highly skilled manpower as a basis for future growth. The Second Annual Review attempted a closer examination of education as a factor in growth. The Council recognized that its work in this difficult area was in the nature of a pioneering venture, but considered it useful to make some initial findings and conclusions:-

Average years of education per person in the male labour force rose rapidly and fairly steadily from 1910 to 1960 in the United States, with gains of 9 to 10 p.c. in each decade over that half century. The Canadian increases were somewhat more uneven and were also consistently below those in the United States. Consequently, it is estimated that although average years of schooling increased by less than 40 p.c. in Canada, the comparable increase in the United States was about 60 p.c. There has thus been a widening educational gap between the two countries. This gap appears to have widened particularly at the secondary school level in the inter-war years, and particularly at the university level in the postwar period. For example, in 1960 about 45 p.c. of the United States male labour force had four years of high school or more education, compared with only 24 p.c. in Canada in 1961.

The Council estimated that the Canada-U.S. differences in the average educational attainments of their respective labour forces account for approximately one third of the difference in productivity between the two countries. The Council's analysis also suggested a strong relationship between individual income levels and educational attainments. For example, in Canada the average income of those who have completed four to five years high sehool is more than one and a half times the average of those who have only elementary school education; and those who have university degrees have an average income which is more than two and a half times the average of those with only elementary school education, and more than twice the average of those who have only one to three years of high school.

A rough estimate of the 'profitability' of education can be made by calculating the extra income which on average is associated with a higher level of education, against the extra outlays and costs involved in obtaining such an education. On the basis of such calculations, it was estimated that returns on the 'human investment' in high school and university education in Canada are in the range of 15 to 20 p.c. a year. This is a somewhat bigher rate of return than has been calculated for the United States.

The benefits from increased education, according to certain calculations and assumptions, are estimated to have accounted for a share in the general order of one quarter of the increase both in the average standard of living and in the productivity of Canadians from 1911 to 1961. Although this is a large contribution, it is apparently substantially lower than that indieated in comparable estimates for the United States.

Canada now faces a general shortage of manpower with bigher educational attainments. The shortages extend from the high school level on up, and are most severe at the professional and university level. These deficiencies in the supply of skills constitate one of the major obstacles to be overcome in achieving a satisfactory rate of improvement in productivity and of economic growth in Canada.

The future benefits from increased efforts in education are very large, and the economic returns to the nation from increased investment in education are likely to exceed by a considerable margin those from most other types of expenditure. This economic gain is complementary to the contribution of education to the human, social and cultura development of individuals.

In the light of these findings, the Council recommended that the advancement of education at all levels be given a very high place in Canadian public policy, and that investment in education be accorded the highest rank in the scale of priorities. In particular, the Council urged that immediate attention be given to:-
(1) The rapid and substantial expansion of post-secondary education in all parts of Canada. The aim should be to provide a ready opportunity for higher education to every qualified Canadian student so that financial obstacles will be eliminated as a barrier to higher education. A substantial increase in funds for research is a necessary feature of expanded and improved education at the higher levels.
(2) The closing of the remaining gaps in school facilities and professional resources at the secondary sehool level so that such education is a real and practical possibility for all Canadian children.
(3) The development and implementation of greatly expanded programs to upgrade and bring up to date the education and skill qualifications of the existing labour force, including professional workers and management. Continuing education and retraining must play an ever-inereasing role in the future.
(4) Social and other measures to reduce drop-outs in high school to achieve a much higher rate of high school completions.
(5) Vigorous efforts through research, the use of new techniques, and upgrading the qualifications of teachers to improve the quality and methods of education.
(6) Closer co-operation between business, labour and the educational system, along with improved counselling of students, regarding future manpower needs and the most effective ways of meeting these needs.

## Regional Growth and Disparities

The problem of assuring an appropriate participation on the part of each region in the over-all process of national economic development has long been an elusive goal and a continuing concern of the people of Canada. The Council's analysis showed that over the past four decades there has been relatively little progress toward the achievement of a better balance in this respect. Despite various policies and programs, very wide disparities have continued to exist in average per capita income. Also, there have continued to be wide differences in the extent to which the human and material resources of each region have found opportunities for productive use. While national prosperity has always tended to have a favourable influence everywhere, rapid national growth has not by itself served to bring about any significant or lasting reduction in these large and stubborn differences.

Regional levels of personal income per capita (in current dollars) are shown for three selected groups of years in the following statement. Provinces are ranked in order of level of income in 1963 and the data are for three-year averages centred on the year shown.

| Propince | 1987 | 1987 | 1005 |
| :---: | :---: | :---: | :---: |
|  | 3 | * 1 | * |
|  | 509 | 981 | 2,025 |
| British Columbis (incl. the Xukon and Northwest |  |  |  |
| Territories)......... | 535 | 980 | 1,966 |
| Alberta ${ }_{\text {, }}$....... | 509 | 823 | 1,760 |
| Saskatchewan | 448 | 818 | 1,749 |
| Manitoba. | 455 | 875 | 1,721 |
| Quebec... | 378 | 709 | 1,521 |
| Nova Scotia. | 299 | 676 | I,302 |
| New Brunswick. | 277 | 609 | 1,167 |
| Prince Edward Island, | 248 | 477 | 1,115 |
| Newfoundland....... | +* | ... | 1,009 |
| Provinclal Average | 407 | 783 | 1,532 |

The most striking features of the above comparisons are the substantial percentage difference in income levels between the highest and lowest province and the fact that the rankings of the provinces in terms of income levels have hardly changed over a period of almost 40 years.

The Council concluded that efforts to promote more regionally balanced growth should be aimed at achieving a more rapid increase in the incomes of the lagging regions by methods which do not retard the development of the faster-growing areas of the country. In this way the economic growth of the national economy would be improved for the benefit of all regions in Canada. The Council said that, in order to accomplish this result, it is essential that regional development policies be directed to two basic objectives-the increase of opportunities for high-productivity employment and the acceleration of programs which can make the maximum contribution to improvements in productivity generally in the region. The Council suggested the following guidelines for action:-
(1) the avoidance, as far as possible, of subsidies merely to create temporary activity or to sustain indefinitely low-productivity industries and deelining occupations;
(2) encouragement of efficient agglomerations of activity-growth centres-within the different regions in order to achieve increasing economies of scale, larger markets and more useful pools of skills, and to avoid uneconomic scatter and dispersion;
(3) the taking of decisions in respect of investments in social capital in accordance with an adequate consideration of the economic and social benefits to be obtained in relation to costs;
(4) the recognition of the urgent need to make available additional financial resources to the goveruments of the lower-income regions and through the appropriate federal agencies in order to help break the vicious circle of low productivity, low incomes, low government revenues and low investments in growth-promoting services which are needed to improve the quality and effective utilization of the available human and material resources-in particular, education, training, research, health, transport facilities, resource and industrial development and the development of wider markets;
(5) the necessity for close co-ordination in the formulation and implementation of consistent regional development policies and programs among all levels of government; this is particularly important in view of the wide range of programs and policies affecting regional development, both on the part of the provinces and through certain federal agencies such as the Atlantic Development Poard, the Area Development Agency and the Agricultural and Rural Development Administration; and
(6) the avoidance of self-defeating restrictive and divisive measures which interfere with the free flow of goods, capital, labour and enterprise between all the provinces; such measures must be avoided if we are to achieve simultaneously the twin goals of more satisfactory growth in every region and a rapid expansion of the national economy from which all would benefit.

The Council observed: "It is clear that the narrowing of inter-regional income disparities and the achievement of a more regionally balanced economic growth involve large, urgent, and especially challenging tasks. Many decades of experience have shown that these tasks cannot be accomplished by piecemeal expenditures, superficial expedients, unproductive works and mere transfers of income. The appropriate policies and programmes will need to be formulated within a long-run consistent framework and carried out with a continuing regard for the real and underlying problems involved."

In its Third Annual Review, the Council looked at the economic performance of the various regions during the general expansion that began in 1961. It found that the benefits of this long and vigorous advance were quite widely diffused throughout the country. All regions participated in the growth of income and the rise in living standards, and achieved rates of increase on a per capita basis considerably higher than their long-term bistorical experience. The growth in employment and the reduction in unemployment was widespread. The capital investment boom was extended to all regions and a substantial expansion of provincial-municipal services was accomplished. Of particular interest was gome tentative evidence of inter-regional convergence in earnings per employed person, implying, as it does, some moderation in the wide differences in productivity levels among the major regions. It is clear, nevertheless, that the inherent diversity of the country has made for widely different patterns and an uneven pace of development among the various regions. Briefly stated, the strongest and most diversified gains were achieved in the two highest-income regions, Ontario and British Columbia, where broadly based expansion in total income and employment enabled these provinces to maintain a substantial lead over the remainder of the country.

## Problems of Northern Development

The North embraces a vast, sparsely settled area and presents special economic and physical characteristics, all of which suggest that a separate study of the area is required. The Council hopes by means of future studies to explore ways for effectively promoting development in the North in a manner that will enhance over-all national growth.

In the summer of 1966 , members of the Economic Council, at the invitation of the Minister of Indian Affairs and Northern Development, visited several centres in the North. This hurried trip could not be expected to provide time for searching inquiries into conditions and prospects in such a far-flung and difficult frontier area. But the Council came away with certain distinct impressions:-

[^365]
## Labour-Management Relations

The Act establishing the Council also directs it to "encourage maximum consultation and co-operation between labour and management", and to "foster and promote the maintenance of good human relations in industry" In carrying out this function, the Council has convened two national conferences on labour-management relations. The first, held at Ottawa in November 1964, dealt with the state of labour-management co-operation in

Canada generally, and experiments and developments in labour-management co-operation in the United States and a number of European countries, and their relevance for Canada. Discussion at the conference was based primarily on research papers commissioned by the Council. One of the major conclusions of this conference, attended by a widely representative group of business and labour leaders as well as labour relations specialists from governments and universities, was that the complex problems arising from rapid economic change-including technological change-cannot be dealt with adequately by labour and management in the crisis atmosphere of periodic collective bargaining. There was a feeling that existing labour legislation in Canada too often tends to encourage such crisis bargaining, thus inhibiting and frustrating the development of more continuous discussions in co-operative relations needed to deal with the problems of adjustment. The conference also concluded that future meetings of this kind should deal with specific subjects. One of the topics suggested for future conferences was that of the problem of adjustment to technological change.

After considerable study, the Council-itself broadly representative of labour and management as well as of the general public-published in January 1967 a set of principles to guide labour and management in this particular area. The document, "A Declaration on Manpower Adjustments to Technological and Other Change"," was submitted to a Second National Conference on Labour-Management Relations in Ottawa in March. One of the fundamental points made in this declaration was the need to provide information as early as possible about anticipated change in industry and its manpower implications. The Council regarded this as basic and preliminary to the carrying out of any program of manpower adjustment. The Council said that, although it is impossible to stipulate for all industrial situations what the period of advanced notice should be since so many varying factors are involved, there should be as much advance notice as possible, with a minimum of not less than three months where changes of material significance are involved. Although it may be difficult to apply such minimum advance notice to change arising from a sudden curtailment in the production of an enterprise due to market conditions, it should definitely apply to all changes, with manpower implications, resulting from technological innovations or changes in production or administration methods. The declaration then went on to suggest several steps that could be taken jointly by labour and management to facilitate the adjustment of members of the work force who are directly or indirectly affected by such changes. These steps would include the planned use of attrition, transfer to other jobs, training and retraining, provisions to improve the portability of pension rights, and-where none of these steps prove workable-financial measures to ease the impact of the employee separation. The Council observed that unless these problems arising out of continuous change can be solved, tensions between labour and management inevitably will increase. The Council was hopeful that the declaration would make a significant contribution to the solution of problems in this difficult area and would also contribute significantly to an improvement in the industrial relations climate in Canada.

## Subsection 2.-The Atlantic Development Board

The persistence of the problems of slow growth and low income in the Atlantic region compared with the remainder of Canada has long been of concern to the Federal Government as well as to the governments of the Atlantic Provinces. Policies and programs introduced over the years in an effort to better economic conditions were not entirely successful for various reasons and recently it became imperative that new solutions should be sougbt and the traditional patterns of economic activity in this area modified. Among the changed approaches was the establishment by the Federal Government of the Atlantic Development Board in 1962 (SC 1962-63, c. 10, as amended by SC 1963, c. 5).

The Board incorporates three essential principles in regional economic development: joint and closely co-ordinated development of programs with the governments of the

[^366]Atlantic Provinces; a concern with the basic structure of the regional economy and with problem causes rather than symptoms; and, where otherwise not available, federal financial assistance for development projects.

The Board is a special agency, distinct from the regular machinery of governments. Its eleven members are appointed for fixed periods from all the Atlantic Provinces and from diverse fields of activity. It thus has the knowledge, the interest and the freedom to pioneer regional development. Headquarters of the Board are in Ottawa and the staff consists of 55 persons of whom about half are professional. The staff is organized into two functional Divisions-the Program Division is concerned with all aspecta of Board projects including economic and engineering investigations and the carrying out of the projects themselves; the Planaing Division is responsible for, in consultation with the Economic Council of Canada, the preparation of a co-ordinated plan for the promotion of the growth of the Atlantic region. For obvious reasons, the staff works very closely with officials of other departments and agencies. Each province has a regional committee which works with the Board staff on matters relating to that particular province. When projects are approved, the appropriale department or agency is requested to supervise the work and arrange administrative details on the Board's behalf. Ministers or officials from each of the four provincial governments are designated to act as liaison officers with the Board.

Very broadly, the Board's functions are to prepare a co-ordinated plan for the promotion of the economic growth of the Atlantic region and to recommend programs and projects to cope with or mitigate current problems. In carrying out these functions, the Board is acutely conscious of the interdependence of short-run and long-run policies and the need for consistency among them. Economic growth and development, particularly when based on increased industrial activity, require substantial investment in capital facilities for power, transportation, pure water for industrial purposes, and other services. These facilities, commonly referred to as 'infrastructure', are of basic importance and, for this reason, major emphasis has been placed on this type of investment. Since the construction of such facilities could not be financed by the Atlantic Provinces themselves at this time and on the necessary scale, the Federal Government, in July 1963, established a $\$ 100,000,000$ Atlantic Development Fund which, along with annual appropriations, will enable the Board to carry out ita functions.

By Mar. 31, 1966, projects costing an estimated $\$ 76,706,069 \mathrm{had}$ been approved and expenditures of $\$ 24,501,698$ had been made against that amount, leaving outstanding commitments of $\$ 52,204,371$. The projects are as follows:-

| Project | Expenditure Approsed | Funds Disbursed |
| :---: | :---: | :---: |
|  | 5 | 1 |
| Power- |  |  |
| Bay D'Eapoir, Nfid.-hydro-electric power development. | 20,000,000 | 8,530,675 |
| Mactaquac, N.B.-hydro-eleetric power development...... | 20,000,000 | 8,219,996 |
| Power cable to link Prince Edward Island with mainland. | 4,309,000 | - |
| Newiomalland and Labrador Power Commission converaion to 60 cycles. | 4,000,000 | 695,637 |
| Maccan to Amherst, N.S.-grant toward cost of power line....... | 112,800 | - |
|  | 48,412,800 | 17,446,308 |
| Trangportation- |  |  |
| Financial Assistance for Trunk Highway Syatems- |  |  |
| Province of New Brunswick. | 3,000.000 | 3,000,000 |
| Province of Newfoundland. | 3,000,000 | 1,700,000 |
| Province of Nova Scotia. | 3,000,080 | 167,260 |
| Province of Prince Edward Island............................. | 1,000,000 | 790,209 |
| Financial Assistance for Paving Access Rosds to Selected Fisbing Ports- |  |  |
| Province of Prince Edward Island............................ | 675,000 | $\rightarrow$ |
|  | 10,675,000 | 5,657,459 |


| Project | Ezpenditure A pproved | Funds <br> Disburved |
| :---: | :---: | :---: |
|  | * | * |
| Otaer Baftc Strvicks to Indubtry- <br> Water Supply and/or Sewage Syatems, etc.-- |  |  |
| Fortune, Harbour Grace. Port Union, Fermeuse and Isle aax Morts, Nfid. | 2,326,000 | - |
| Trepassey, Bay de Verde, Burqeo, Gauitoia, St. Anthony, Enalee and Twillingate, Nfld., and Labrador.. | 2,247,000 | - |
| Georgetown, P.E.I.............................................. | 850,000 | 543,863 |
| Canso. N.S. ${ }^{\text {Shippegan, }}$ N.B. | 747,919 498.548 | 95,747 152,715 |
| Bonavists, Nifd. | 287,067 | 31,674 |
| Riverport, N.S. | 242,000 |  |
| Lower East Pubnico, N.S | 218,775 | 185, 543 |
| Cheticamp, N.S. ....... | 140,000 | 38,851 |
| Harthand, N.B. | 125.000 | $\underline{\square}$ |
| Millown, N.B.E. | 100.000 50.000 | 13,480 |
| Newtown, Nfid. | 50,090 |  |
| Grand Etang, N.E. | 46.629 | 43,273 |
| Industrial Park Facilitien- |  |  |
| Dorchester Point, N.B. | 1,500,000 | - |
| Stellarton, N.S........ | 700.000 | - |
| Lakeeide, N.S.. | 560,000 |  |
| Saint John, N.B | 450.000 |  |
| Summerside, P.E.I. | 118,327 | 116,174 |
| Abatement of industrial water poilution | $2,000.000$ | , |
| Trawler repair facilities-Marystown, Ned | 825.000 |  |
| Boglands clearine-Burin Peninsula, Nfld. | 156,009 145,006 |  |
| Fish proceesing plant-Port Mouton, N.S. | $145+006$ 40.000 | 8,200 22,744 |
| Water pollation metering equipment. | 10,000 | 9,356 |
|  | 14,613,269 | 1,261,680 |
|  |  |  |
| Financial Assistance for New Research Laboratories and Equip-ment- |  |  |
| Halifar-Dartmouth, N.S. | 1,750,000 | 17,505 |
| Fredericton, N,B.. | 1,250,000 | 115,084 |
|  | 3,000,000 | 132,589 |
| Sundit Exprnditures. | 5,000 | 3,722 |
| Totals. | 76.708,069 | 24,501,698 |

In addition, the following technical and economic survey and studies had been undertaken, financed by Partiamentary appropriations of the Department of Transport:-

| Surdey or Study | 1985 | 1966 |
| :---: | :---: | :---: |
|  | 1 | \$ |
| Study of the water supply system of firh proceesing plants in Newfoundland | - | 79,090 |
| Study of potash exploration in Nova Scotia................................. |  | 66,576 |
| Minas Hastin foundation |  | 55,325 |
| Study of inter-induatry flow of goods and services in Atiantio Provinces.. | 53,555 | 48,445 |
| Study of demand and supply for hardwood in Atlantic Provinces. ........ | $7+890$ | 42.110 |
| Industrial park studies at various centres................................... | 7,500 | 37,500 |
| Entineering investigations for deep water harbour, ore dock and ancillary facilities at Belldune Point, N.B. (cost Bhared with Department of |  |  |
| Public Works)............................................ | 60,429 | 25,824 |
| Study of transatlantic container shipping operation from ports of Halifar, |  |  |
| Economic atudy of grain trade via A | 3,240 | 20,736 |
| Consultant services re power and natural resource | 17,739 | 16.636 |
| Water supply study at Come-by-Chance, NAd... |  | 16,636 12,800 |
| Study of waste products of food and beverage industries in Atlantic |  |  |
| ${ }^{\text {Pravinces. }}$ | - | 9,600 |
| Induatrial location etudy ............................................... | - | 5,841 |
| Investigation into disparity between per capita personal income in the Atlantic region snd the remainder of Canada |  | 4,568 |
| Analysig of federal expenditures in the Atlantic Pro |  | 3,229 |
| Beneficiation reaenreh program on ailica sand. | - | 3,000 |



## Subsection 3.-The Municipal Development and Loan Beard

The Act establishing this Board (SC 1963, c. 13) received Royal Assent on Aug. 2, 1963. The Board comprises a chairman and four other members, all senior officials of government, appointed by the Governor in Council, and reports to Parliament through the Minister of Finance. The Board was set up to make loans up to a total amount of $\$ 400,000,000$ to municipalities to assist in the construction of additional municipal capital projects, thereby providing increased employment during the period 1963-66. The operations of the Board were therefore envisaged as being temporary and no loans have been made - or could have been made-since Mar. 31, 1966. By that date the Board had approved 2,469 loans to 1,292 separate municipalities across Canada, the total amount of the loans being $\$ 399,250,000$. Since loans were limited to two thirds of the project cost, the total amount of construction stimulated by this program was an estimated $\$ 750,000,000$. Over one third of the $\$ 400,000,000$ loan fund was allotted to help finance municipal water and sewer projects; other types of projects assisted included schools, roads and bridges, rapid transit systems, civic buildings, parks, other recreation facilities, hospitals and municipal power distribution. The program had its greatest impact on construction in the year 1965.

After a municipality obtained a loan commitment from the Board, its normal procedure was to borrow from a bank or to use other forms of pre-financing. When the project was completed and audited, the actual transfer of the loan amount to the municipality took place and forgiveness of 25 p.c. of the loan amount (where applicable) arranged. However, legislation permitted loan advances based on construction progress to be made to some municipalities. By Mar. 31, 1966, final loan payments totalling $\$ 119,000,000 \mathrm{had}$ been made on 718 completed projects, with loan forgiveness amounting to nearly $\$ 30,000,000$ being granted. In addition, interim loan advances were made amounting to $\$ 26,500,000$ in respect of 125 projects. Thus, although almost the entire $\$ 400,000,000$ loan fund was committed to provinces and municipalities by that date, the major portion of the actual loan paymenta were made or were being made subsequent to that date.

Under the Act, the interest rate to be paid to the Board on these loans was stated to be the effective interest rate on long-term Government of Canada bonds plus not more than one quarter of 1 p.c. In effect, the rates during the period 1963-66 varied between $5 \frac{1}{4}$ p.e. and $5 \frac{5}{8}$ p.e., depending on market conditions at the time. Most loans were for terms of 20 to 30 years, only one being for the maximum permissible maturity of 50 years.

All municipal loan applications were required to be approved by the province concerned before being submitted to the Board. The province concerned was required to certify its approval of the financing and to verify the fact that the project represented additional work over and above the planned capital program of the municipality. Four provinces (Ontario, Quebec, Manitoba and Saskatchewan) chose to deal directly with their own municipalities in respect of most aspects of the program - the province itself made the loan to
the municipality and borrowed the same amount from the Board. The program was administered in Quebec by the Quebec Municipal Commission and by the respective Departments of Municipal Affairs in Ontario, Manitoba and Saskatchewan. In the other provinces the Central Mortgage and Housing Corporation acted on behalf of the Board to receive municipal applications and to provide various advisory services to municipalities.

## Subsection 4.-Provinctal Government Economic Planning Agencies

In a number of provinces, economic planning agencies have been set up or are in the formative stage. Only those that are currently active are described here.

## The Nova Scotia Voluntary Planning Organization

During late 1961 and early 1962, the Government of the Province of Nova Scotia concluded that, within its limitations as a provincial government and in keeping with democratic traditions, it could increase the rate of economic growth by undertaking an economic planning program of a voluntary nature. Legislation creating the Voluntary Planning Board was passed in March 1963 by a unanimous vote of the Legislature. The Act stipulates that the Board shall consist of a chairman and a vice-chairman, the number of additional members and their terms of office to be determined by Order in Council. The Act also provides for the appointment of Sector and Segment Committees chosen from appropriate occupations by the Lieutenant-Governor in Council. A Sector is defined as "a primary portion or division of the economy" and a Segment is "a part or sub-division of a sector"

The general function of the Board is to assist and advise the Minister in the development and implementation of measures to increase the rate of economic growth of the province by means of voluntary economic planning. The following specific duties are outlined in the Act:-
(a) co-ordinate the plans of the various Sectors of the economy and, based on these plans, produce a plan for the whole economy of the province for recommendation to the Minister as one which the Government might adopt;
(b) collect, collate and disseminate information relative to the economy of the province;
(c) advise the Government on proviacial economic matters;
(d) watch the performance of the Sectors in carrying out their plans and stimulate and encourage the carrying out of such plans;
(e) envisage further plans that should be made and provide for continuity of planning for the future, both short- and long-range; and
(f) conduct or arrange to be conducted such studies and investigations as the LieutenantGovernor in Council or the Minister requests.

In addition, the Board serves as a liaison between government and people in all economic endeavours.

The Board has published a comprehensive over-all plan for the Nova Scotia economy to 1968 which includes the aims of economic planning and objectives for the first planning period. Detailed Sector plans have been published for agriculture, forestry, tourism, transportation and communications, fisheries, and construction. A special study has been made for the service industries and other studies have been undertaken in conjunction with various Sector plans and the over-all plan.

## The Quebec Economic Advisory Council

An Economic Council was instituted by the Quebec Government in 1943 but it disappeared when the mandate of its members was not renewed at the end of three years, as required by the Act. In 1960, the decision was made to reactivate it under the Act that created it in 1943 and in February 1961 a new Act was passed by the Quebec Legislature establishing the Quebec Eeonomic Advisory Council.

The Council (as at Sept. 1, 1966) is composed of 15 titular members appointed by the Cabinet, which is also authorized to appoint five associate members chosen from among
high officers of the Government. At present, the associate members are the Deputy Ministers of Industry and Commerce, of Agriculture and Colonization, of Natural Resources and of Education and the President of Hydro-Quebec; the associate members attend meetings and take part in discussions but are not entitled to vote. There is also a Management Committee composed of five Advisory Council members, of which the President and the Vice-President are members ex officio.

The staff in charge of the administration and the organization of projects, which consists of a general manager and a small group of technical counsellors versed in economic matters, is subject to Civil Service regulations. Its duties consist of extracting the necessary economic syntheses based on fundamental studies made by government departmenta, boards and other agencies. Analyses of these syntheses are made by committees composed of government representatives, university professors, company heads, etc., and the results are submitted to the Cabinet through the Prime Minister.

Under the Act, the mandate of the Quebec Economic Advisory Council is to organize the province in the economic sphere, foreseeing the most complete utilization of its material and human resources, and to advise the government, upon request or on its own initiative, on all economic questions. The first task is broad and demanding; to elaborate a management plan is to project a complete view of the internal economic trend for a certain number of years, taking into account the correlation of all economic factors, especially population, employment, investments and production. The second task is more of a short-term nature; it consists of giving advice to the government on a particular problem or of suggesting to the Government certain measures dealing with the elaborations of policies.

The first phase of the Council's work was spread over the period 1962-64. Plan elaboration occupied about 15 work groups studying more or less deeply the various sectors of economic activity. The studies brought forward the main difficulties connected with the elaboration and execution of a plan suitable to the needs of the province; the difficulties resulted from lack of personnel, of statistical information and of co-operation between government, management and labour unions; from Quebec's particular economic problems; and from the separation of economic powers between the Government of Quebec and the Federal Government, etc. Since 1964, the Council has instituted deeper studies of five categories of problems leading to the elaboration of: a policy on employment and the labour force; a policy of regional development; a policy on research and productivity; a policy on natural resources; and a policy on public investments.

The Council has fulfilled its task of advising the government by proposing the adoption of measures and the creation of bodies leading to the execution of a future plan. Thus, it recommended to the Cabinet: the establishment of a steel industry; the creation of a General Investment Corporation; the nationalization of power companies; the issuing of Quebec Savings Bonds; the establishment of the Quebec Pension Board; the creation of the Deposits and Investments Fund (Caisse de dépôts et de placements); the division of the territory into 10 administrative areas; the recognition of 10 Regional Economic Councils; the creation of a Scientific Research Council; and the establishment of an Industrial Research Centre. Most of the measures recommended by the Council have been adopted by the Government of Quebec.

## The Ontario Economic Council

The Ontario Economic Council was established by Order in Council on Feb. 1, 1962. The Council was conceived as a vehicle where representatives of agriculture, labour, management, education, finance and of government could integrate their knowledge and experience of economic affairs, commission research and formulate policy recommendations to the public and private sectors.

Essentially, the Council operates as an advisory body to the Government of Ontario. Some of its findings are reported directly to the government; other reports and recommendations are published and distributed widely. Recent reports cover the fields of tourism, land-use, education, labour and akill-training.

Twenty Ontario citizens serve as members of the Council. Five of these represent a broad cross-section of business and industry, one each from the financial community and the Consumers' Association of Canada, three come from organized labour, three from agriculture, and one from the provincial universities. One member comes from the senior ranks of the Ontario Civil Service. The remaining five are drawn from the Ontario Research Foundation, the Ontario Regional Development Council, The Hydro-Electric Power Commission of Ontario, and the Ontario Northland Railway. Each serves as an individual citizen without compensation. The Council meets monthly in Toronto.

The Council shares the view of the Government of Ontario that the economy of Ontario is not an entity separate from Canada. For this reason the Council does not undertake separately for Ontario what the Economic Council of Canada has done and is doing for Canada as a whole. Projects are undertaken with the Economic Council of Canada on a co-operative basis and information is constantly exchanged between the two Councils.

Another way in which the Ontario Economic Council pursues its responsibilities is through the work of committees. A total of some 40 citizens representing a broad crosssection of the Ontario community make up the following committees: Agriculture, Northern Development, Industrial Development, Industrial Research, and Tourist Industry.

A small permanent Council staff undertakes direct assignments and superintends the design and administration of projects assigned to others. Close contact with government departments avoids unnecessary duplication of effort. Research facilities, academic personnel and graduate students in Ontario universities have been used for certain projects which have included the professional services of members of economics, political science, geography and business administration in the Universities of Windsor, Western Ontario, Toronto, Waterloo, Queen's and York. From time to time the Council engages the professional services of private consulting firms.

## The Manitoba Economic Consultative Board

The Manitoba Economic Consultative Board was established under the provisions of the Development Authority Act, 1963, and has been operative since the autumn of that year. It is composed of a chairman and ten members appointed by the Lieutenant-Governor in Council and is representative of the leading elements of the labour and business community. Chairmen of the Manitoba Design Institute, the Manitoba Research Council and the Manitoba Export Corporation serve in an ex officio capacity. The Board obtains its funds from the Manitoba Government; its budget in $1965-66$ was about $\$ 130,000$.

The Board was established as an advisory body to the Manitoba Development Authority, the economic planning and co-ordinating committee of the Executive Council. It is charged with examining Manitoba's long-term prospects for growth, a report on which is published annually and widely distributed. Its staff is involved in an on-going program of research into manpower requirements and long-term economic problems.

Consultation with government, management, agriculture and labour on obstacles to more rapid growth is an integral part of the Board's task. Thus, working with various management groups in the province, the provision of adequate management education programs was examined recently. This led to the formation of the Manitoba Institute of Management Inc., a non-profit private corporation representative of management, educators, labour and government, to provide broad community support for a greatly strengthened program of management education in the province.

Whenever possible the Board co-operates with other provincial councils and with the Economic Council of Canada. With the latter Council, the Board co-sponsored a Conference on Productivity Through New Technology in February 1965.

## CHAPTER XXV -BANKING, OTHER COMMERGIAL FINANCE AND INSURANCE



The interpretation of the symbols used in the tables throughout the Year Book will be found on $p$. viti of this volume.

## PART I.-BANKING AND OTHER COMMERGIAL FINANCE

## Section 1.-Banking

## Subsection 1.-The Bank of Canada*

The Bank of Canada is Canada's central bank. It was incorporated under the Bank of Canada Act in 1934 and commenced operations on Mar. 11, 1935. The Act of Parliament which established the central bank charged it with the responsibility for regulating "credit and currency in the best interests of the economic life of the nation", and conferred on it certain specific powers for discharging this responsibility. Through the exercise of these powers, the Bank of Canada determines broadly the combined total of the basic forms of Canadian money held by the community-currency outside banks plus deposit balances in chartered bank accounts.

By virtue of the provisions of the Bank of Canada Act, which enable the central bank to increase or decrease the total amount of cash reserves available to the chartered banks as a group, the Bank of Canada is able to determine broadly the over-all level of the total assets and deposit liabilities of the group, and hence of the combined total of currency and bank deposits. The Bank Act requires that each chartered bank maintain a minimum amount of cash reserves in the form of deposits at the Bank of Canada and holdings of Bank of Canada notes. This minimum requirement is 8 p.c. of the bank's total Canadian

[^367]dollar deposit liabilities on a monthly average basis. The ability of the chartered banks as a group to expand their total assets and deposit liabilities therefore depends on the level of total cash reserves. An increase in cash reserves will encourage the banks to expand their total assets (which consist chiefly of loans and marketable securities) with a concomitant increase in deposit liabilities; a decrease in cash reserves will bring about a decline in their total assets and deposit liabilities as they seek to restore their cash reserve ratios.

The chief method by which the Bank of Canada can affect the level of cash reserves of the chartered banks, and through them the total of chartered bank deposits, is by purchases and sales of government securities. Payment by the central bank for the securities it purchases in the market adds to the cash reserves of the chartered banks as a group and puts them in a position to expand their assets and deposit liabilities. Conversely, payment to the central bank for securities it sells causes a reduction in reserves of the chartered banks and makes it necessary for them to reduce their assets and deposit liabilities.

The influence that the Bank of Canada has on credit conditions and hence on economic behaviour stems from its ability to determine broadly the level of total holdings of currency and chartered bank deposits. The trend of total holdings of these forms of money can have an influence on liquidity generally, including effects on interest rates and bond prices and the availability of credit, and on expectations regarding future financial and economic trends, all of which have some effect on decisions to spend or to save. However, many factors other than changes in the money supply also have important influences on financial and economic developments, such as: the state of economic conditions and prospects outside Canada; the competitive strength of Canadian business enterprises both at home and abroad; the character of the investment decisions and price and wage policies in domestic industries; the skills and degree of mobility of labour; and the nature of public policies at all levels of government with regard to such matters as expenditure, taxation, subsidies and the regulation of industry. In forming its judgments, the Bank of Canada is bound by criteria laid down by Act of Parliament in the preamble to the Bank of Canada Act of 1934. Its operations must be based, not on any simple mechanical formula, but rather on continuous observation and appraisal of the constantly changing state of the economy as reflected in the complex pattern of economic and financial developments.

Although the Bank of Canada has the power to determine the combined total of currency and chartered bank deposits, it has no means of determining how much of this total is held in the form of currency and how much in the form of chartered bank deposits. That depends on the wishes of the public, since deposits can be converted freely into notes and coin and back again. Nor does the Bank have any direct control over the growth of other forms of money or of close substitutes for money as a store of wealth in licjuid form, of which there are many varieties in Canada-mainly deposit balances in savings institutions other than chartered banks and short-term securities issued by governments and corporations.

The cash reserve system in Canada, which is similar to that in a number of other countries, while placing the central bank in a position where it can determine within broad limits the total amount of chartered bank assets and deposits, leaves the allocation of bank credit and other forms of credit to the private sector of the economy. Each chartered bank can attempt to gain as large a share as possible of the total cash reserves by competing for deposits. Each bank determines how its assets will be distributed, for example, between various kinds of securities and loans to various types of borrowers. The Bank of Canada has no power to direct banks or other lenders to make funds available to certain groups or in certain regions on the same terms or on different terms than to other groups or in other regions. The influence of the central bank-based in essence on its power to expand or contract chartered bank cash reserves through its market purchases or sales of securitiesis both indirect and impersonal and is brought to bear on financial conditions generally through the chartered banks and the numerous inter-connected channels of the capital market.

The powers of the Bank are set forth in the Bank of Canada Act, 1934 (RSC 1952, c. 13), revisions in which were made in 1936, 1938, 1954 and 1967 Some of these powers are outlined in the 1965 Year Book at pp. 1031-1032.

The Bank is under the management of a Board of Directors composed of a Governor, a Deputy Governor and twelve Directors. The Governor and Deputy Governor are appointed for terms of seven years each by the Directors, with the approval of the Governor General in Council. The Directors are appointed by the Minister of Finance, with the approval of the Governor General in Council, for terms of three years each. The Deputy Minister of Finance is a member of the Board but does not have the right to vote. There is an Executive Committee of the Board composed of the Governor, the Deputy Governor, one Director and the Deputy Minister of Finance (who is without a vote) which has the same powers as the Board except that its decisions must be submitted to the Board at its next meeting. In addition to the Deputy Governor who is a member of the Board, there may be one or more Deputy Governors appointed by the Board of Directors to perform such duties as are assigned by the Board.

The head office of the Bank is at Ottawa. It has agencies at Halifax, Saint John, Montreal, Ottawa, Toronto, Winnipeg, Regina, Calgary and Vancouver and is represented in St. John's and Charlottetown.
1.-Assets and Liabilities of the Bank of Canada, as at Dec. 31, 1962-66

| Item | 1962 | 1963 | 1964 | 1965 | 1966 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 | \$'000,000 |
| Foreign exchange............ | 47.4 | 42.4 | 97.6 | 28.3 | 55.2 |
| Bankers' acceptances............................... | 3.3 | - |  | - | - |
| Investments- ${ }_{\text {Treasury bills of Canada..................... }}$ | 455.2 | 465.6 | 478.7 | 608.1 | 409.1 |
| Other securities issued or guaranteed by Canada maturing within 2 years. | 446.6 | 688.0 | 349.2 | 477.7 | 737.8 |
| Other securities issued or guaranteed by Canada not maturing within 2 years. | 1,980.8 | 1,881.7 | 2,236.5 | 2,330.8 | 2,272.4 |
| Bonds and debentures issued by Industrial Development Bank. | 127.1 | 150.6 | 176.5 13.4 | 200.7 14.0 | 239.8 |
| Other securities................................ | 25.7 | 21.5 | 13.4 36.0 | 14.0 39.0 | 171.7 42.0 |
| Industrial Development Bank capital stock...... | 31.0 10.7 | 33.0 11.8 | 13.0 13.2 | 169.3 | 16.5 |
| All other assets. | 103.3 | 150.4 | 240.8 | 240.9 | 262.3 |
| Totals, Assets . | 3,231.1 | 3,444.9 | 3,641.9 | 3,955.8 | 4,206.8 |
| Capital paid up Liabilities | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Rest Fund.... | 25.0 | 25.0 | 25.0 | 25.0 | 25.0 |
| Notes in Circulation- Held by chartered banks..................... All | 416.8 $1,817.0$ | 418.4 $1,886.2$ | 355.1 $2,025.5$ | 382.7 $2,152.9$ | 438.1 $2,295.5$ |
| All other...................................... | 1,817.0 | 1,880.2 | 2,025.5 | 2,152.8 |  |
| Government of Canada. | 42.9 | 49.4 | 68.9 | ${ }_{1}^{116.2}$ | ${ }_{1}^{34.1}$ |
| Chartered banks...... | 745.6 | 811.4 | 882.1 | 1,034.2 | 1,111.3 |
| Other. | 38.1 | 38.9 52 | 35.6 44.9 | 34.5 30.8 | 36.9 |
| Foreign currency liabilities | 61.1 79.6 | 52.8 | $\begin{array}{r}499.8 \\ \hline 1\end{array}$ | 174.3 | 231.2 |
| Totals, Liabilities | 3,231.1 | 3,444.9 | 3,641.9 | 3,955.8 | 4,206.8 |

The Industrial Development Bank.-The Industrial Development Bank, a subsidiary of the Bank of Canada, was incorporated by Act of Parliament during 1944 and its banking operations commenced on Nov. 1, 1944. Its functions are described in the preamble to the Act as follows:-

[^368]The President of the Industrial Development Bank is the Governor of the Bank of Canada and the Directors are the Directors of the Bank of Canada and the Deputy Minister of Trade and Commerce. The authorized capital of the Bank is $\$ 50,000,000$ and it may also raise funds by the issue of bonds and debentures provided that its total direct liabilities and contingent liabilities in the form of guarantees and underwriting agreements do not exceed five times the aggregate of the Bank's paid-up capital and Reserve Fund.

The Bank may extend financial assistance to industrial enterprises in Canada which, by definition in the Act, include any industry, trade or other business undertaking of any kind. With respect to such enterprises the Bank is empowered to lend money or guarantee loans and where an enterprise is a corporation the Bank may also enter into underwriting agreements with regard to any issue of stock, bonds or debentures; acquire stock, bonds or debentures from the issuing corporation or any person with whom the Bank bas entered into an underwriting agreement; and acquire certificates issued by a trustee to fibance the purchase of transportation equipment. The total amount of commitments of the Bank, in the form of loans, guarantees, etc., in excess of $\$ 200,000$ each, may not exceed $\$ 200,000,000$.

The Bank may accept any form of collateral security against its advances, including realty and chattel mortgages which constitute the usual kind of security taken. The Bank is intended to supplement the activities of other lending agencies, not to compete with them, and the Act of Incorporation provides that it should extend credit only when, in the Bank's opinion, credit or other financial resources would not otherwise be available on reasonable terms and conditions. Its lending takes the form of fixed-term capital loans rather than current operating loans. The Bank is specifically prohibited from engaging in the business of deposit banking. It has branch offices in the following cities: St. John's, Halifax, Saint John, Moncton, Rimouski, Quebec, Trois-Rivières, Montreal, Ottawa, Toronto, Hamilton, Waterloo, London, Windsor, Sudbury, Port Arthur, Winnipeg, Regina, Saskatoon, Calgary, Edmonton, Kelowna, Vancouver, Victoria and Prince George.
2.-Assets and Liabilities of the Industrial Development Bank, as at Sept. 30, 1962-46

| Item | 1962 | 1963 | 1964 | 1965 | 1966 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ $\mathbf{0 0 0 , 0 0 0}$ | \$ 000,000 | $8^{\prime} 000,000$ | $\$^{\prime} 000,000$ | \$ 000,000 |
| Assets- |  |  |  |  |  |
| Loans outstanding | 184.9 | 200.9 | 224.2 | 255.1 | 298.1 |
| Other asseta., | 2.2 | 3.7 | 5.2 | 6.9 | 7.0 |
| Totals, Assets, | 167.1 | 204.6 | 229.4 | 262.0 | 305.1 |
| Liablities- |  |  |  |  |  |
| Capital and reserves . . . . . . . . . . . . . . . . . . . . . | 49.0 | 53.3 | 57.0 | 61.7 | 66.2 |
| Bonds and debentures ontstanding.............. | 115.3 | 147.6 | 168.1 | 195.4 | 232.8 |
| Other liabilities................................ | 2.8 | 3.7 | 4.3 | 4.9 | 6.1 |
| Totals, LTabilities. . . . . . . . . . . . . . . . | 167.1 | 204.6 | 229.4 | 262.0 | 305.1 |
| Loan Transactions- |  |  |  |  |  |
| Disbursements. | 74.3 | 74.0 | 69.5 | 81.1 |  |
| Repayments. | 32.6 | 38.2 | 46.2 | 50.2 | 55.2 |
| tions. ......................................... | 203.6 | 232.6 | 264.2 | 297.8 | 350.6 |
|  | No. | No. | No. | No. | No. |
| Customers on booke. | 4,083 | 5,105 | 6.028 | 6,962 | 7.870 |

[^369]
## Subsection 2.-Currency

Note Circulation.-The development by which bank notes became the chief circulating medium in Canada prior to 1935 is described in the 1938 Year Book, pp. $900-905$. Those features of the development which then became permanent are outlined in the 1941 Year Book, pp. 809-810.

When the Bank of Canada commenced operations in 1935 it assumed liability for Dominion notes outstanding. These were replaced in public circulation and partly replaced in cash reserves by the Bank's legal tender notes in denominations of $\$ 1, \$ 2, \$ 5, \$ 10, \$ 20$, $\$ 50$ and $\$ 100$. Deposits of chartered banks at the Bank of Canada completed the replacement of the old Dominion notes of $\$ 1,000$ to $\$ 50,000$ denomination that had previously been used as cash reserves. The chartered banks were required under the Bank Act of 1934 to reduce gradually the issue of their own bank notes during the years 1935-45 to an amount not in excess of 25 p.c. of their paid-up capital on Mar. 11, 1935. Bank of Canada notes thus replaced chartered bank notes as the issue of the latter was reduced. Further restrictions introduced by the 1944 revision of the Bank Act cancelled the right of chartered banks to issue or re-issue notes after Jan. 1, 1945, and in January 1950 the chartered banks' liability for such of their notes issued for circulation in Canada as then remained outstanding was transferred to the Bank of Canada in return for payment of a like sum to the Bank of Canada.
3.-Bank of Canada Note Liabilities, as at Dec. 31, 1962-66

| Denomination | 1962 | 1963 | 1964 | 1805 | 1968 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$000 | \$'000 | 8.000 | \$000 | $\$ 1000$ |
| Bank of Canada Notes$\$ 1$. | 91,426 | 94,853 | 97.742 | 103,115 | 109,846 |
| \$2................................................. | 63,837 | 66.670 | 68,768 | 73,328 | 78,874 |
| 85. | 162,643 | 167,743 | 172,752 | 183,057 | 196, 863 |
| \$10.. | 548,442 | 558,688 | 574,516 | 608,351 | 668,153 |
| 520. | 766, 974 | 811,119 | 841,002 | 904,872 | 983,765 |
| 225. | 46 | 46 | 46 | 46 | 46 |
| \$50. | 155,938 | 158,277 | 163,418 | 173,580 | 188,13! |
| \$100. | 413,490 | 415,563 | 429,093 | 453,687 | 471,550 |
| \$500 | 37 | 37 | 34 | 33 | 33 |
| \$1,000. | 17,951 | 18,603 | 20,181 | 22,597 | 23,377 |
| Totals.................................. | 2,220,755 | 2,291,600 | 2,367,553 | 2,522,666 | 2,720,668 |
| Note issues in process of retirement ${ }^{1}$............. | 13,067 | 18,044 | 13,006 | 12,984 | 12,966 |
| Totals, Bank of Canada Note Liabilitles... | 2,233,822 | 2,304,644 | 2,380,559 | 2,635,650 | 2,733,634 |
| Held by $\rightarrow$ Chartered banks. | 418,845 | 418,405 | 355,088 | 382,703 | 438,090 |
| Others. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 1,816,977 | 1,886,239 | 2,025,473 | 2,152,947 | 2,295,544 |

[^370]4.-Note Circulation in the Hands of the Public, as at Dec. 31, 1957-66

| As at Dec. 31- | Bank of Canada Notes ${ }^{1}$ | Per Capita | As at Dec. 31- | Bank of Canads Notes ${ }^{1}$ | Per Capita |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | 8 |  | 8 | \$ |
| 1957. | 1,555,115,143 | 93.63 | 1962. | 1,816,977, 132 | 97.84 |
| 1958. | 1,659,870,299 | 97.18 | 1963. | 1,886,238,792 | 99.82 |
| 1959. | 1,704,822,198 | 97.51 | 1964. | 2,025,473,300 | 105.30 |
| 1960. | 1,731,902,386 | 96.92 | 1965. | 2,152,947,110 | 110.01 |
| 1961. | 1,800,190,122 | 98.70 | 1966. | 2,295,543,656 | 115.24 |

${ }^{1}$ Total issue less notes held by chartered banks.
Coinage.*-Under the Currency, Mint and Exchange Fund Act (RSC 1952, c. 315), gold coins may be issued in denominations of twenty dollars, ten dollars and five dollars (nine-tenths fine or millesimal fineness, 900). Subsidiary coins include: silver coins in denominations of one dollar, 50 cents, 25 cents, 10 cents (eight-tenths fine or millesimal fineness, 800); pure nickel five-cent coins; and bronze (copper, tin and zinc) one-cent coins. Provision is made for the temporary alteration of composition in event of a shortage of prescribed metals. A tender of payment of money in coins is a legal tender in the case of gold coins issued under the authority of Sect. 4 of the Currency, Mint and Exchange Fund Act for the payment of any amount; in the case of silver coins for the payment of an amount up to $\$ 10$; nickel coins for payment up to $\$ 5$; and bronze coins up to 25 cents.

It was announced in December 1966 that the Royal Canadian Mint will change from silver to pure nickel for coinage of the three main silver coins currently in use-the 10 cent, 25 -cent and 50 -cent coins; the production of silver dollars will continue. The change will require amendments in the Currency, Mint and Exchange Fund Act, which are to be submitted to Parliament in 1967, and become effective during 1968.

## 5.-Canadian Coin in Circulation, as at Dec. 31, 1956-65

Norg.-The figures shown are of net issues of coin. Figures from 1901 are given in the corresponding table of previous Year Books beginning with the 1927-28 edition.

| As at Dec. 31- | Silver | Nickel | Tombac ${ }^{1}$ | Steel | Bronze | Total | Per Capita |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | \$ | 8 | \$ | 8 |
| 1956.. | 100,922,477 | 8,545,507 | 552,868 | 3,456,782 | 13,742,282 | 127,219,916 | 7.91 |
| 1957 | 107, 116,450 | 8,910,869 | 550,743 | 3,455,886 | 14,745,243 | 134,779,191 | 8.11 |
| 1958. | 115,120,076 | 9,289,481 | 549,630 | 3,455, 062 | 15,322,156 | 143,736,405 | 8.42 |
| 1959. | 123,344, 059 | 9,865,012 | 549,237 | 3,454,209 | 16,150,222 | 153,362,739 | 8.77 |
| 1960. | 136,710,958 | 11,599,263 | 549,090 | 3,452,876 | 16,895,953 | 169,208,140 | 9.47 |
| 1961. | 146,902,352 | 14,110,198 | 549,021 | 3,451,708 | 18,311,853 | 183,325,132 | 10.05 |
| 1962. | 162,928,707 | 16,433,088 | 549,009 | 3,450,676 | 20,595,543 | 203,957, 023 | 10.98 |
| 1963. | 180,492,972 | 18,627,687 | 548,999 | 3,449,476 | 23,383,788 | 226,502,922 | 11.99 |
| 1964. | 206,551,965 | 22,522,116 | 548,996 | 3,448,547 | 28,009,356 | 261,080,980 | 13.57 |
| 1965. | 239, 927,246 | 26,397,784 | 548,989 | 3,447,516 | 30,968,064 | 301,289,599 | 15.39 |

[^371]The Royal Canadian Mint.*-The Ottawa Mint, established as a branch of the Royal Mint under the (Imperial) Coinage Act of 1870, was opened on Jan. 2, 1908. On Dec. 1, 1931, it became the Royal Canadian Mint and now operates as a branch of the Department of Finance.

[^372]The principal functions of the Mint are the execution of domestic and foreign coin; the refining of gold and silver; the acquisition of gold, silver and other metals, payments for which are made on the basis of Mint assays; the control, preparation and movement of gold and coin shipments; the safeguarding of Mint holdings of monetary metals, including coin and precious metals in various processing stages until finished and issued; the fabrication and engraving of dies for coinage, medals, signatures and official seals; the issue of coin sets to numismatists and the administration of various regulations issued under the terms and provisions of the Currency, Mint and Exchange Fund Act (RSC 1952, c. 315).

## 6.-Recelpts of Gold Bullion at the Royal Canadian Mint and Brilifion and Cofnage Issued, 1356-65

Nore.-Figures from 1926 are given in the correaponding table of previous Year Booke beginning with the 1946 edition.

| Year | Gold Received | Gold Bullion Issued | Silver Coin Issued | Nicket Coin Issued | Bronze Coin Isqued |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | oz.t. | oz. t . | \$ | \% | \$ |
| 1956. | 3,801,789 | 3,774,599 | 5.389,464 | 469,993 | 786,855 |
| 1957. | 3, 896,084 | 3,776,711 | 6,236.429 | 366,493 | 1,004,221 |
| 1958. | 3,958,459 | 4,088,706 | 8,044+753 | 379.616 | 578,274 |
| 1959. | 3.908.640 | 3,836,680 | 8,273.563 | 676.680 | 829,116 |
| 1960. | 4,024,626 | 4,014,771 | 13,432,251 | 1,735,707 | 748, 101 |
| 1961. | 3,800,137 | 3,812,054 | 10,299,581 | 2,512.369 | 1,417.544 |
| 1962. | 3,488,974 | 3,520,408 | $16.114,240$ | 2,324.212 | 2,284,025 |
| 1983 | 3,457,092 | 3,467,554 | 17.688,668 | 2,196.217 | 2,790,679 |
| 1964. | 3,188,868 | 3,173.573 | 26,153,154 | 3,895,746 | 4,626,863 |
| 1965. | 2,991,450 | 3,026,974 | 33,479,378 | 3,877,921 | 2,961,126 |

Dollar Currency and Bank Deposits.-Bank of Canada statistics concerning currency and chartered bank deposits are given in Table 7.
7.-Canadian Dollar Currency and Chartered Bank Deposits, as at Dec. 31, 1957-66
(Millions of dollars)

| As at <br> Dec. 31- | Currency Outside Banks |  |  | Cbariered Bank Deposits |  |  |  | Total Currency and Chartered Bank Deposits ${ }^{1}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Notes | Coir | Total | Personal Savings Deposits | Government of Canada Deposits | Other Deposits ${ }^{1}$ | Total ${ }^{1}$ | Total Including Government Deposits | Held by General Publie |  |
|  |  |  |  |  |  |  |  |  | Including <br> Savings Deposits | Excluding Perbonal Saving Deposits |
| 1957. | 1,555 | 112 | 1,667 | 6.108 | 423 | 3,725 | 10,256 | 11,923 | 11,500 | 5,398 |
| 1958. | 1,660 | 121 | 1,781 | 6.844 | 319 | 4,303 | 11,466 | 13,247 | 12,927 | 8,884 |
| 1959. | 1,705 | 128 | 1,832 | 6.900 | 404 | 4,057 | 11,360 | 18,193 | 12,789 | 5,890 |
| 1960. | 1,732 | 144 | 1,876 | 7.25 | 810 | 4,313 | 12,037 | 13.914 | 13,404 | 6.189 |
| 1961.... | 1,800 | 158 | 1,959 | 7,618 | 588 | 4,998 | 13,205 | 15,163 | 14,575 | 6, 867 |
| 1962. | 1.817 | 177 | 1,994 | 7,932 | 564 | 5,193 | 13,689 | 15.683 | 15,119 | 7,187 |
| 1963 , | 1,886 | 188 | 2.054 | 8,443 | 914 | 5,623 | 14,980 | 17,064 | 16,150 | 8.78 |
| 1964. | 2.025 | 229 | 2,254 | 8,935 | 696 | 6.164 | 15,795 | 18.049 | 17,353 | 8,576 |
| 1968. | 2,153 | 268 | 2,419 | 9.725 | 797 | 7,201 | 17,723 | 20.142 | 19,345 20,578 | 10,330 |
| 1966. | 2,296 | 293 | 2,588 | 10,248 | 919 | 7.741 | 18,908 | 21.497 | 20,5\% |  |

${ }^{1}$ Lesa total float, i.e., cheques and other items in transit.

## Subsection 3.-The Chartered Banks*

The Canadian commercial banking system consists of ten privately owned banks, chartered by Parliament and operating under the provisions of the Bank Act. $\dagger$ Of the eight in operation, five are nation-wide institutions; two operate mainly in Quebec and in other French-speaking areas and one, affiliated with a New York bank, has branches in six large cities. At Sept. 30, 1966, these banks together operated 6,031 banking offices of which 5,802 were in Canada and 229 abroad. Thus, the chief distinguishing feature of the Canadian banking system is the relatively small number of large banks having an extensive network of branches, operating under a single legislative jurisdiction (the Federal Government) and under one detailed and comprehensive statute (the Bank Act).

Since the first banks were established during the first quarter of the nineteenth century, the commercial banking system has developed in response to the changing needs of the Canadian economy, an evolution which is still in rapid progress. Canadian economic development has been characterized by two main features-successive but by no means continuous periods of rapid geographical expansion of settlement, and a continued dependence on export markets as new natural resources (agricultural land, forests and minerals) were exploited. Thus, Canadian banking has continually bad to migrate to new areas and to find appropriate methods of financing new industries and new products; and it has from the beginning possessed a strongly 'international' character $\ddagger$ with much emphasis on the financing of foreign trade, on foreign exchange operations, and on correspondent relations with foreign banks. At the same time, as regional isolation has gradually broken down and the economy has been integrated, banks originating in local areas have become part of a nation-wide banking system, in part by process of amalgamation particularly marked in the first twenty-five yeare of the present century.

## Bank Legislation

From the first, banks in what is now Canada sought to operate under Acts of incorporation (charters) passed by the legislatures of the colonies in which they operated. As new banks were incorporated and older ones obtained charter renewals, there developed in the bank charters themselves a quite extensive and fairly uniform code of banking law. At Confederation, responsibility for banking and currency was given to the Dominion Government and in 1871 the first general Bank Act was passed. This legislation is subject to review and revision every ten years, a feature that has helped to keep the banking system adapted to the needs of a changing economy. The decennial revision was due in 1964, but the Bank Act was extended in order to provide time to consider recommendations made by the Royal Commission on Banking and Finance established in 1961; the Commission's report was published in 1964. $\dagger \dagger$

The Bank Act has become a most detailed and comprehensive piece of legislation which provides for the internal regulation and organization of the banks, for the auditing of their accounts, and for the ways in which their capital stock may be issued and transferred, their dividends paid, and their affairs settled in case of amalgamation, winding-up or insolvency. In addition, it states what cash reserves the banks must keep, what reports they must make to the Government and to the Bank of Canada about their affairs and sets forth a variety of rules governing the conduct of business with the public. The Bank Act also apecifies the maximum rate of interest that may be charged on bank loans. (Since the 1944 Bank Act revision this ceiling has been 6 p.c., replacing the 7-p.c. ceiling that

[^373]had prevailed since 1871.) The banks derive their corporate existence from the Act, which states that "each bank is a body politic and corporate and this Act is its charter"; successive Bank Acts have empowered the banks to do business for a period of ten years, until the next revision of the Act.

## Banking Operations

Operating under the Bank Act, the chartered banks at their branches accept deposits from the public, make loans covering a wide range of commercial, industrial, agricultural and consumer activities, deal in foreign exchange, receive and pay out Bank of Canada notes and coin, provide safekeeping facilities, and perform a variety of other services coming within the scope of the general business of banking. The head office of a Canadian bank does not transact ordinary day-to-day business with the public; it performs general administration and policy-making functions, manages the bank's investment portfolio, does its centralized accounting work, and maintains specialized departments devoted to inspection of branch operations, the development of branch office methods, the acquisition of new business, premises, staff, arrangements with foreign banks, advertising, etc.

Under its branch system, Canadian banking is able to provide standard banking facilities throughout the country. Every branch, even the smallest, can provide all banking services and each has behind it the resources of a large bank, which means that lending requirements can be met just as well by a branch in a small town or a suburban branch as in the main branches of a large city. Branch banking also provides an excellent training for Canadian bank officers through the system of promotion and transfer from branch to branch. Almost without exception, the chief executives of the Canadian banks have grown up in the service and have been trained in this way.

The branch system has proved to be most flexible and Canadian banking has been able to keep pace with settlement and economic development during its periods of most rapid growth. Particularly during the past quarter-century, with a rapidly expanding economy, sharply rising population and growing urbanization, new branches have opened at a very rapid rate. Banking offices in Canada, which numbered about 3,300 at the end of 1939 and 3,100 at the end of 1945 , grew by over 2,900 in the next 21 years. As this growth suggests, Canadian banks have taken full advantage of the recent expansive atmosphere to extend the volume and variety of their services to industry and to individuals. Strongly competing for customers, they offer a wide variety of new deposit arrangements, including new savings programs, new forms of chequing accounts and greatly broadened lending facilities.

By the end of the War, the banks had experienced more than fifteen years of restricted demand for commercial credit; at the end of 1945 security holdings accounted for about 55 p.e. of the banks' total assets, compared with a little over 40 p.c. just before the War and only about 15 p.c. in 1930. In the early postwar years, the economic control apparatus created for the War was gradually dismantled. The expansion of the private sector of the economy and the contraction of the government sector were quickly reflected in a shift of bank assets from government securities to commercial loans. Between the end of 1945 and the end of 1950, bank loans in Canadian currency increased from about 21 p.e. to 31 p.c. of total assets. There was, at the same time, a rapid growth in total assets, as the monetary authorities leaned to the side of relatively easy money conditions to stimulate the economy and to ward off the widely anticipated postwar recession. In the five years ended Dec. 31, 1950, total assets expanded from about $\$ 7,300,000,000$ to $\$ 9,400,000,000$, almost all of the increase being in Canadian assets.

It was not until the outbreak of the Korean War in June 1950 that the fear of inflation, arising from the heavy demands on Canadian resources, led to the adoption of restraining measures. Since then, the banks have experienced substantial changes in their creditgranting capacity, as the country's official monetary policy was adapted to meet changes in business conditions. Alternating periods of ease and reatraint have been marked by periods of rapidly rising bank assets followed by levelling-off phases.

The Korean boom of 1950-51 was followed, after only a short pause, by the investment boom of 1953-54. Recession in 1954-55 was accompanied by an easy monetary policy, during which the banks built up their liquid assets in the form of government bonds. Then a second and greater investment boom got under way in late 1955, which carried the Canadian economy and the banking system into another period when resources were strained to the limit. At this time, new measures of restraint were introduced into the Canadian banking system by the monetary authorities, including an agreed secondary reserve ratio of 7 p.c. in addition to the cash reserves of 8 p.c. already prescribed in the Bank Act revision of 1954. A further agreement with the Bank of Canada was aimed at restraining term loans for capital purposes* and in 1956 bank loans to instalment finance companies were also put under some restraint. The boom of 1955-57 was followed by a mild recession in 1957-58, moderate recovery in 1958-59, slackening in 1960 and recovery again in 1961-65. Over the period 1955-65, the banks had not regained the liquidity that characterized earlier postwar recessions, and there appeared an increasing need to husband resources carefully for the various and growing alternative outlets which developed as the result of economic growth, and of the efforts of both the Federal Government and the banks themselves to provide new uses for bank credit. In 1966 the Government introduced legislation which, when passed, would increase competition between banks and other financial institutions. $\dagger$

One of the first government measures was the Farm Improvement Loans Act of 1944, under which the chartered banks were authorized to make loans to farmers for the purchase of equipment and livestock and for making various improvements to their farm buildings and facilities (see pp. 458-459). These loans are often for sizable amounts (an average of about $\$ 1,500$ ) and the terms have been gradually extended to a maximum sum of $\$ 15,000$ outstanding to any one borrower with a maximum period of ten years (four years for implements). The banks are guaranteed against loss up to 10 p.c. of their loans made during the three-year "lending periods', up to a maximum total of loans by all banks. This total is $\$ 700,000,000$ for the lending period to end in mid-1968. By the end of July 1966, the total amount of loans made under this Act was approximately $\$ 1,855,600,000$ and the amount outstanding was $\$ 377,000,000$.

The 1954 revision of the Bank Act introduced a major change in banking practice by enabling the banks to acquire mortgages issued under the National Housing Act. About 35 p.c. of all NHA mortgage loans in the years 1954-59 were made by the chartered banks, but at the end of 1959 the NHA interest rate was raised to $6 \frac{3}{4}$ p.c. and the banks withdrew from this field of lending. Notwithstanding this, by Dec. 31, 1966 they held some $\$ 780,000,000$ in NHA mortgages, representing about 4 p.c. of total assets. Another change affecting housing in the 1954 revision enabled the banks to make home improvement loans under a guarantee system rather similar to the one developed for farm improvement loans. By the end of 1965, home improvement loans amounting to more than $\$ 383,700,000$ had been approved and the banks had about $\$ 73,200,000$ of such loans on their books.

In November 1960, the Small Businesses Loans Act was passed guaranteeing, under terms to the banks similar to those of the Farm Improvement Loans Act, certain types of bank loan to small businesses for the purposes of making capital improvements to premises and equipment. This provides for loans that do not fall within the usual scope of bank lending to small business, by reason of the term nature of the loan together with the lack of collateral resources of the borrower. Of course, chartered banks make loans to small businesses for a great variety of purposes, including many of a medium-term character; indeed, the working capital loan to the small-size or medium-size industry or commercial enterprise is the traditional stock-in-trade business of the chartered banks.

In April 1961, the charter of the Export Finance Corporation of Canada Limited, which had been incorporated by special Act of Parliament in June 1959 for private in-

[^374]terests, was acquired by the chartered banks. The principal purpose of the Corporation is to assist in the medium-term (one to five years) financing of exports which have been insured by the Export Credit Insurance Corporation, a Crown company.

Still another area of lending which has expanded greatly in recent years is that of consumer credit. Although the banks have always made some personal loans, they have recently moved aggressively into the field of lending to the general public for the purchase of automobiles, consumer durables and debt consolidation. Following the 1954 Bank Act revision, and partly as a result of the change then made which enabled the banks to take chattel mortgage security, some banks have developed extensive consumer credit divisions. Personal loans made by the banks, other than those secured by stocks and bonds and home improvement loans, mounted from $\$ 420,000,000$ at the end of 1957 to $\$ 2,401,600,000$ outstanding at Dee. 31, 1966.

Outside of Canada, the Canadian banks have continued to expand their branch systems in the Caribbean area (although the two Canadian banks operating in Cuba found it necessary to withdraw), in South America and in Europe. In recent years the growth of an international money market, following the economic recovery in Europe and the restoration of confidence in the stability of the Western economies and their currencies, has led to large movements of Western capital from one centre to another. The Canadian banks have participated extensively in this international money market, mainly through New York and London where most of them maintain large offices.

The postwar growth in bank assets has been accompanied by a substantial increase in total earnings. Earnings per share of capital employed did not increase to the same extent, however, as the banks found it necessary to raise new funds from time to time after 1950 in order to maintain an appropriate relationship between their shareholders' capital and the rapidly rising level of risk assets. The banks have been among the largest issuers of new share capital to Canadians in the past quarter-century.

Branches of Chartered Banks.-Although there are fewer chartered banks now than at the beginning of the century, there has been a great increase in the number of branch banking offices. As a result of amalgamations, the number of banks declined from 34 in 1901 to 10 in 1931, and remained at that figure until the incorporation of a new bankThe Mercantile Bank of Canada-in 1953 brought the total to 11. Since then the amalgamation in 1955 of The Bank of Toronto and The Dominion Bank as The TorontoDominion Bank, the amalgamation of Barclays Bank (Canada) with the Imperial Bank of Canada in 1956 and the amalgamation of the Canadian Bank of Commerce and the Imperial Bank of Canada as the Canadian Imperial Bank of Commerce on June 1, 1961 have reduced this number to eight.* The number of branches of chartered banks in each province periodically from 1868 to 1966 is given in Table 8.
*See footnote f. p. 1125.
8.-Branches of Chartered Banks, by Province, as at Dec. 31 for Certain Years 1868-1966

Nots.-Figures for 1920 and subsequent years idchude sub-agencies in Canada receiving deposits for the barka employing them; there were 758 such sub-agencies at Dec. 31, 1966.

| Province or Territory | 1868 | 1902 | 1905 | 1820 | 1926 | 1830 | 1940 | 1950 | 1960 | 1962 | 1963 | 1964 | 1985 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. | No. |
| Newtoundland. | - |  |  |  |  |  |  | 39 | 71 | 87 | 88 | ${ }^{90}$ | 109 | 107 29 |
| Prince Edward Island | - | 9 | 10 | 41 | 28 | 28 | 25 | 23 144 | $\begin{array}{r}27 \\ 173 \\ \hline\end{array}$ | $\begin{array}{r}27 \\ 178 \\ \hline\end{array}$ | $\begin{array}{r}26 \\ 180 \\ \hline\end{array}$ | -26 | $\begin{array}{r}29 \\ 189 \\ \hline 189\end{array}$ | 189 |
| Nova Scotia | 5 | 89 | 101 | 169 | 134 | 138 | 134 97 | 144 | 173 | 178 118 | 180 | 183 | ${ }_{126}$ | 132 |
| New Brun | 12 | ${ }^{3} 37$ | 196 | 1.150 | 1.072 | 1.183 | 1,083 | 1,184 | 1,427 | 1.489 | t. 515 | 1,539 | 1,580 | 1.604 |
| Ontario | 100 | 349 | 549 | 1,586 | 1,326 | 1,409 | 1,208 | 1,257 | 1,785 | 1.916 | 1,967 | 2,022 | 2.055 | 2.078 |
| Manitoba |  | 52 | 95 | 349 | 224 | 239 | 162 | 165 | 234 | 248 | 255 | 261 | 271 | 279 |
| Saskatche |  |  |  | - 591 | 427 | 447 | 233 | 238 | 296 | 299 | 303 | 308 | ${ }^{317}$ | ${ }_{462}^{321}$ |
| Alberta. |  | 30 | 87 | ( 424 | 269 | 304 | 172 | 246 | 394 | 417 | 431 | 445 | 458 | 462 588 |
| British Colum | 2 | 46 | 55 3 | 242 3 | 186 3 | 229 4 | 192 5 | 294 | 514 17 | 545 14 | 546 15 | 363 15 | 16 | 17 |
| Cana | 123 | 747 | 1,145 | 4,676 | 3,780 | 1,083 | 3,311 | 3,679 | 5,051 | 5,332 | 5,447 | 5,575 | 5,724 | 5,806 |

9.-Branches of Individual Canadian Chartered Banks, by Province, as at Dec. 31, 1966

Nors.-This table includes 758 sub-agencies in Canada for receiving deposits.

| Bank | Nfld. | P.E.I. | N.S. | N,B. | Que. | Ont. |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | No. | No. | No. |
| Bank of Montreal............................... | 30 | 3 | 27 | 24 | 188 | 350 |
| The Bank of Nova Scotia ....................... | 43 | 8 | 52 | 41 | -68 | 28 |
| Banque Canadienne Nationale..................... | - | -2 | 二 | 18 | ${ }_{325}$ | 23 |
| Canadian Imperial Bank of Commerce........... | 10 | 8 | 20 | 18 | 180 | 615 |
| Tbe Mercantile Bank of Canada.... | 2 | 7 | 1 | 0 | ${ }^{2}$ | ${ }^{1} 1$ |
| The Royal Bank of Canada... | 23 | 7 | 79 | 26 | 174 | 401 |
| The Toronto-Dominion Bank. | 1 | 1 | 4 | 8 | 71 | 387 |
| Totak............................. | 107 | 23 | 189 | 132 | 1,604 | 2,078 |
|  | Man. | Sask. | Alta. | B.C. | $\begin{gathered} \text { Y.T. } \\ \text { M.W.T. } \end{gathered}$ | Total |
|  | No. | No. | No. | No. | No. | No. |
| Bank of Montreal. <br> The Bank of Nova Scotia. <br> Banque Canadienne Nationale. <br> Banque Provinciale du Canada <br> Canadian Imperial Bank of Commerce. <br> The Mercantúle Bank of Capada. <br> The Royal Bank ol Canads. <br> The Toronto-Dominion Bank | 61 | 64 | 106 | 134 | 1 | 988 |
|  | 23 | 33 | 61 | 74 | 1 | 684 |
|  | 4 | - | - | - | - | 621 |
|  | 68 | 93 | 141 |  |  | + 363 |
|  | ${ }_{6}^{68}$ | -93 | 141 | 194 | $-{ }^{9}$ |  |
|  | 79 | -91 | 92 | 121 | -3 | 1,096 |
|  | 42 | 40 | 61 | 67 | - | 679 |
| Totals. | 275 | 321 | 462 | 588 | 17 | 5,806 |

## 10.-Branehes of Individual Canadian Chartered Banks Outside Canada, as at Dec. 31, 1966

Nots.-This table does not include sub-agencies operating outside Canada, of which there were 36 in 1966.

| Bank and Location | Number | Bank and Location | Number | Bank and Location | Number |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Bank of MontrealBritain. United States. France. Germany. | 2328 | Canadian Imperial Bank of CommerceBritain. United States. Antigua Bahsmas. Barbados | ${ }_{11}^{2}$ | The Royal Bank ofCanada-concl. | 2 |
|  |  |  |  |  |  |
|  |  |  |  | Britain............ |  |
|  |  |  |  | Guyana. | ${ }^{8}$ |
|  |  |  |  | Haiti... | 10 |
|  |  |  |  | Jamaica. |  |
| The Bank of Nova ScotiaAntigua.......... | 5 | Barbados. <br> Cayman Islands <br> Grenada | 1 | Peruerto Rico. | 1 |
|  |  |  | $t$ | Trinidad and Tobago | 12 |
|  |  | Jamaica. | 8 | United States....... | 1 |
| Bahamas. |  | St. Vincent............... | 5 |  | 10 |
| Trinidad... | ${ }_{8}^{1}$ | Trinidad................ |  | West Indies............. |  |
| Barbados......... | 2 |  |  |  |  |
| Dominican Republic. | 3 | The Royal Bank of |  | The Toronto-DominionBank- | 2 |
| England......... | 3 | Canada- |  |  |  |
| Jamaics....... | 24 | Argentina................ | 2 | Uritain ${ }_{\text {United }}$ Statess........... |  |
| St. Lucis. | 1 | Brasmas.............. | 4 |  |  |
| Puerto Rico. | 3 | British Hordurss....... |  | $\square$ |  |
| U.S. Virgin Lslands | 3 | Caymen Islands......... | 1 | Braque CanadienneNationale- |  |
| United States. | 1 | Colombia............... | 510 |  | 1 |
| Netherlands. | 1 | Dominican Republio.... |  | France............ |  |
| Ireland. |  | Frenck Weest Indies, .... | 2 | Tetal. | 196 |

Financlal Statistics of the Chartered Banks.-The classification of chartered bank assets and liabilities was revised by the Bank of Canada Act, 1954, so that the statistical series given in Tables 11-15 begins with that year. Assets and liabilities are given in less detail for 1954-61 in the 1965 Year Book, p. 1043 and corresponding figures to those in Table 11 for 1962 and 1963 in the 1966 edition, p. 1066; month-end data are available from Dec. 31, 1954 to date in the Bank of Canada Statistical Summary.

## 11.-Statement of Chartered Bank Assets and IAablities, as at Dec. 31, 1964-46

| Asseta and Liabilities | 1964 | 1985 | 1968 |
| :---: | :---: | :---: | :---: |
|  | $\$^{+} 000$ | \$'090 | \$000 |
| Assets |  |  |  |
| Gold and coin in Canada. | 41,361 | 59.217 | 53,17t |
| Gold and coin outside Canad | 1,121 | 1.621 | 1,573 |
| Notes of and deposits with Bank of Can | 1,237, 192 | 1,416,043 | 1,549,348 |
| Deposits with other banks in Canadian currey | 55,222 7,294 | 62.409 11.082 | 61,805 18.042 |
| Deposits with other banka in currencies other than Canadi | 1, 597, 118 | 1,383, 332 | 1,518,168 |
| Cheques and other items in transit (net) | 803,285 | 774,510 | 1,017,076 |
| Government of Cansda tretsury bilis, at amortized value. | 1,250,864 | 1,357,313 | 1,547,861 |
| Other Government of Canads direct and guaranteed securitjes maturing within two years, at amortized value | 1,125,879 | 854,725 | 884,413 |
| Government of Canada direct and guaranteed securities maturing after two years, at amortized value.. | 1,336,486 | 1,422,530 | 1,473,002 |
| Canadian provincial government direct and guaranteed securitien, at amortized value. | 372.193 | $1,23,531$ 338,231 | 279,866 |
| Canadian municipal and echool corporstion securities, not exceeding mariset value. | 307,347 | 331,214 | 320,570 |
| Otber Canadian seeurities, not exceeding market value............ | 486,772 | 521,861 | 548,585 |
| Securities other than Canadiap, not exceeding market y | 586.750 | 833,031 | \$13,719 |
| Mortgages and hypothecs insured under the National Housing Act 1954.. | 850.977 | 815,050 | 782,584 |
| Day-to-day. call and short loans to investment dealera and brokers in Canadian currency, secured | 403,828 | 459,053 | 563,061 |
| Day-to-day, cali and short loans to investment dealers and brokers in currencies other than Canadian, secured | 1,017.254 | 716,643 | 873.580 |
| Loans to Canadian provincial goveruments in Canadian currency........ | 30,188 | 59,362 | 101,402 |
| Loans to Canadian mumicipalities and achool corporations in Canadian currency, less provision for estimated loss. | 362,589 | 521.221 | 613,977 |
| Other current loans in Canadian currency, less provision for estimated loes. | 8,866,087 | 10,488,498 | 11,131,617 |
| Other current loans in currencies otber than Canadian, less provision for estimated loss. | 2,010,858 | 2,239,777 | 2,565, 8800 |
| Non-current loans, less provision lor estimated i | 1,441 | 1,4911 | 1,564 |
| Bank premises at cost, less amounts written off. | 315,454 | 311,613 | 315,110 |
| Shares of and loans to corporations controlled by the bank | 70, 163 | 88,914 | 99,197 |
| Customera' liability under aceeptances, guarantees and letters of credit, as per contra Other assets. | 722,393 5.817 | 899,817 7,739 | 847,864 13,403 |
| Totals, Assets. | 23,871,334 | 25,874,789 | 37,773,427 |
| Liabilitles-* |  |  |  |
| Deposits by Government of Canada in Canadian currency .............. |  |  | 919.025 302,761 |
| Deposits by Cansdian provincial governmenta in Canadian correacy...... | 201,554 182,898 | 343,806 197,693 | 201. 105 |
| Deposits by other banks in Canadian currency.........d | 1930,627 | 1,260,056 | 1,271,010 |
| Personal asvings deposits payable after notice, in Canada, in Canadian currency. | 8, 934, 586 | 9,725.322 | 10.248, 112 |
| Other deposits payable after notice, in Cabadian carreacy................. | 1, 305.377 | 2,043,859 | 2,345,663 |
| Other deposits paysble on demand, in Canadian eurrency | 5,176,120 | 5, 488, 421 | 5,293, 41 |
| Other depasits in currencies other than Canadian........ | 4,280.801 | 3,822,489 | 4, 8477864 |
| Acceptances, guarantees and letters of credit | 722,393 88,472 | 899,617 63 | 75,558 |
| Other hiabilities | 281,958 | 285,958 | 285,958 |
| Capital paid us. | 881.300 | 936.000 | 963,700 |
| Undivided profits at latest fiscal year-e | 11,531 | 13,361 | 15, 34 |
| Totals, Liabilities. | 23,871,332 | 25,874,782 | 27,773,427 |

## 12.-Canadian Cash Reserves, 1957-66

Nors.-Bank of Canads deposits are averages of the Juridical days in the month shown; Bank of Canada notes and Canadian dollar deposite are averages of the four consecutive Wednesdays ending with the second last Wednesday in the previone month.
(Millions of dollars)

| Year | Cash Resarvee |  |  | Canadian <br> Dollar <br> Deposit <br> Liabilitiea | Average Cash Ratio |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Bank of <br> Cadada <br> Depoaits | Bank of Canada Notea | Total |  |  |
| 1957. | 535 | 335 | 870 | 10,601 | 8.2 |
| 1958. | 607 | 336 | 943 | 11.458 | 8.2 |
| 1959. | 648 | 351 | 999 | 12,187 | 8.2 |
| 1960 | 625 673 | 360 | ${ }_{1}^{985}$ | 12,052 | 8.2 |
|  |  |  |  |  |  |
| 1962. | 748 | 376 | 1,124 | 13,812 | 8.1 |
| 1963. | 775 | 394 | 1.169 | 14.400 | 8.1 |
| 1964. | 857 | 407 | 1,263 | 15,598 | 8.1 |
| 1985. | 965 | 427 | 1,392 | 17,186 | 8.1 |
| 1966. | 1,057 | 449 | 1,506 | 18,604 | 8.1 |

## 13.-Classiffation of Chartered Bank Deposit Liabilities Payable to the Public in Canada

 in Canadlan Currency, as at Sept. 30, 1565 and 1966| Deposit Accounts of the Public of- | 1965 |  |  | 1966 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Personal Savinga Depoeit Accounta | Other <br> Deposit Accounts of the Public | Total <br> Deposit Accounts of the Public | Personal Saving Depofit Accounts | Otber <br> Deposit Accounts of the Public | Total <br> Deposit Accounts of the Public |
|  | No. | No. | No. | No. | No. | No. |
| Lexs than $\$ 100$. | 6,864,876 | 1,538,247 | 8,403,123 | 7,158,103 | 1,560,210 | 8,718,313 |
| \$100 or over but less than $\$ 1,000 \ldots .$. | 3,759,330 | 1,118,423 | 4,877,753 | 3,993,666 | 1, 199.803 | 5,192,968 |
| \$1,000 or over but less than $\$ 10,000$. | 1,990,806 | 440, 437 | 2,431,243 | 2,132,781 | 478.727 | 2,611,508 |
| \$ 100000 or over but less than $\$ 100,000$ | 183,077 1,359 | 81,951 9,723 | 205,028 11,082 | 134,632 1,936 | 91,865 9,532 | 226,497 11,468 |
|  |  |  |  |  | 0,53 |  |
| Tetak, Deposlts | 12,733,448 | 3,188,781 | 15,928,229 | 13,421,188 | 3,389,637 | 16,764,755 |

## 14.-Classiflcation of Chartered Bank Loans in Canadian Currency, as at Dec. 31, 1894-66

| Class of Loan | 1064 | 1965 | 1968 |
| :---: | :---: | :---: | :---: |
|  | \$ 0000,000 | \$ 000,000 | \% 0000,000 |
| General Loans- |  |  |  |
| Personal. ........... . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 2,323.1 | 2,801. 4 | 2,986.9 |
| To individuals, fully secured by marketable bonds and stocks. | 468.6 | 541.9 | 509.6 |
| Home indimprovement loans............ To | 78.0 782.6 | 78.4 | 76.8 |
| Farmers- |  |  |  |
| Farma Improvement Lonns Act. | 274.8 | 344.2 |  |
| Other tarm loang. . . . . . . . . . . . | 433.0 | 459.5 | 494.7 |
| Industry.. | 1,764.4 | 2,010.2 | 2,491.4 |
| Chemical and rubber products. | 1.788 .4 | ${ }_{88.2}$ | 2,48.8 |
| Electrical apparatus and supplies | 88.7 | 109.5 | 166.8 |
| Foods, beverages and tobacco.. | 290.4 | \$678.6 | 468.0 |
| Furniture.................. | 299.5 36.9 | 278.2 | 298.8 48.8 |
| Iron and steel produeta.... | 851.1 | 287.0 | \$55.6 |
| Mining and mine producte. | 127.6 | 141.0 | 161.4 |
| Petroleam and products..... | 128.4 | 178.8 | 188.6 |
| Tranesportation equipment.... | $\underline{119.8}$ | 248.7 117.5 | 198. 19.9 |
| Other producte... | 136.6 | 160.8 | 180.1 |

## 14.-Classification of Chartered Bank Loans in Canadian Currency, as at Dec. 31, 1964-66-concluded

| Class of Loan | 1964 | 1965 | 1966 |
| :---: | :---: | :---: | :---: |
| General Loans-concluded | \$'000,000 | \$'000,000 | 8'000,000 |
| Merchandisers. | 1,139.0 | 1,248.3 |  |
| Construction contractors. | 1.455 .9 | 1,493.6 | 1,235.2 |
| Public utilities, transportation and communications | 248.4 | 275.2 | 345.4 |
| Other business................................ | 1,321.5 | 1,599.3 | 1,499.6 |
| Religious, educational, health and welfare institutions | 262.1 | 284.8 | 313.5 |
| Totals, General Loans | 8,222.3 | 9,516.7 | 10,216.2 |
| Other Loans- |  |  |  |
| Provincial governments. | 30.2 | 59.4 | 101.4 |
| Municipal governments and school districts | 362.6 | 521.2 | 614.0 |
| Stock brokers...... | 61.3 | 79.1 | 100.7 |
| Investment dealers................................. | 89.4 198.4 | 129.2 | 184.1 |
| Loans to finance the purchase of Canada Savings Bonds | 198.4 148.0 | 200.5 246.0 | 227.6 |
| Instalment and other finance companies | 148.0 298.8 | 246.0 526.8 | 265.6 423.8 |
| Totals, Other Loans | 1,188.7 | 1,762.1 | 1,917.2 |
| Grand Totals, Loans in Canadian Currency. | 9,411.0 | 11,278.8 | 12,133.3 |

## 15.-Chartered Bank Earnings, Expenses and Additions to Shareholders' Equity, Fiscal Years Ended in 1961-66

Note.-In 1964 and 1965 the financial years of five banks ended on Oct. 31, two on Nov. 30 and one on Sept. 30; in 1966 all banks ended their financial year on Oct. 31.


Net Additions to Shareholders' Equity.
${ }^{2}$ Before provision for inealized profits and losses on disposal of securities are included in operating earning other than income taxes. ${ }_{4}$ Profits and losses on sale of fixed assets and adjustments relating to prior years. ${ }^{5}$ After amounts retransferred to rest account. "Includes income taxes on taxable portion of additions to and amounts retransferred from inner reserves, and foreign income taxes.

Cheque Payments.-A monthly record of the value of cheques charged to customer accounts at all chartered bank offices in the major clearing-house centres of Canada is available from 1924. During the past twenty years the value of cheques cleared in these centres has increased steadily at an average of over 9 p.c. a year. Clearing centres in British Columbia showed the highest rate of increase during that period, followed closely by Quebec and Ontario.

The value of cheques cashed in the 35 major clearing centres in 1965 reached a record high of $\$ 476,000,000$, an increase of 14.1 p.c. over 1964. All but one of the reporting centres recorded increases. London, Ont., reported the largest increase at 22.5 p.c., Halifax, N.S., increased by 20.7 p.c., Saskatoon, Sask., by 18.2 p.c. and Vancouver, B.C., by 16.2 p.c. Toronto, which accounted for 37.5 p.c. of the total value of cheques cleared, rose by 14.9 p.c. and Montreal by 14.1 p.c.
16.-Cheques Cashed at 35 Clearing-House Centres, 1964 and 1965

| Clearing-House Centre | 1964 | 1965 | Clearing-House Centre | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | $8^{\prime} 000$ |  | \$000 | \$ 000 |
| Atlantic Provinces. | 8,301,159 | 9,667,242 | Ontario-concluded |  |  |
| Halifar.......... | 3,852,641 | 4,649,283 | Sudbury................. | 838,983 | 973,684 |
| Moncton. | 887,873 | 1,035,278 | Toronto.................. | 155,418,798 | 178, 642,251 |
| Saint John St. John's. | $1,706,178$ $1,854,507$ | 1, 2351,482 | Windsor | 3,531,255 | 4,234,667 |
| - |  |  | Prairle Prorinces. | 61,044,052 | 48,303,393 |
| Quebec. | 126,978,357 | 144,586,1*6 | Brandon................. | 328,967 | 322,078 |
| Montreal | 116,372,368 | 132, 783,252 | Calgary. | 14,070.305 | 15,495,880 |
| Quebec.. | 9,564,067 | 10,599, 128 | Edmonton.............. | 10.541,712 | 11,937,495 |
| Sherbrooke | 1,034, 922 | 1,193,746 | Lethbridge.............. | 643,859 | 695,785 |
| Ontario. | 101,639,223 | 219,77\%,367 | Medicine Hat. . . . . . . . ${ }_{\text {Mor }}$ | 309,689 442.559 | 323,256 475,891 |
| Brantiord. | 101, 921,946 | 1,037,147 | Prince Albert. ............ | 275,287 | 296,308 |
| Chatham. | 868,547 | 932,891 | Regina. | 5,926, 437 | 6,323,104 |
| Cornwal | 609,142 | 684,950 | Saskstom | 1,551.490 | 1,884,178 |
| Fort William. | 853, 174 | 678,252 | Winnipeg................. | 26,954,757 | 30,599,418 |
| Hamilton... | $8,570,766$ 809,636 | 9,968,268 ${ }_{940}$ | British Colu | 23,372,078 | 33,46,748 |
| Kitchener. | 2,006, 150 | 2,322.531 | New Westminster........ |  |  |
| Loddon., | 5,763,605 | 7,062,318 | Vanconver. | 25,239,274 | 29,823,153 |
| Ottawa. | 8,601,107 | 8,687,423 | Victoria. | 4,132,804 | 4,323,590 |
| Peterborough. | 850,500 $1,504,844$ | 927,069 1.796,657 |  |  |  |
| Sarnia.. | 760,770 | 888,766 | Totals. | 417,334,919 | 475,887,871 |

## Subsection 4.-Government and Other Banking Institutions

There are three distinct types of savings banks in Canada in addition to the savings departments of the chartered banks and of trust and loan companies: (1) the Post Office Savings Bank, in which deposits are a direct obligation of the Government of Canada; (2) Provincial Government savings banking institutions in Ontario and Alberta, where the depositor becomes a direct creditor of the province; and (3) two important savings banks in the Province of Quebec--the Montreal City and District Savings Bank and La Banque d'Économie de Québec-established under federal legislation and reporting monthly to the federal Department of Finance. In addition, co-operative credit unions encourage savings among low-income classes and extend small loans to their members.

Post Office Savings Bank.-The Post Office Savings Bank was established under the Post Office Act of 1867 (SC 1867, c. 10) to "enlarge the facilities now available for the deposit of small savings, to make the Post Office available for that purpose, and to give the direct security of the nation to every depositor for repayment of all money deposited by him together with the interest due thereon" Branches of the Government of Canada's Savings Bank under the Department of Finance were gradually amalgamated with this

Bank over a period of 50 years and the amalgamation was completed in March 1929. Summary financial statistics for the years ended Mar. 31, 1963-66 follow.

| Item | 1965 | 1964 | \$965 | 1966 |
| :---: | :---: | :---: | :---: | :---: |
|  | \$ | * | 5 | \$ |
| Deposits and interest. | 5,714,720 | 5,422,181 | 4,962,529 | 4,542,467 |
| Depraits . . . . . + . | 5,07s,618 | 4,815,401 | 4.288,950 | 5,995,127 |
| Interest on deposita | 648,107 | 608,779 | 578,579 | 547. 540 |
| Withdrawals........ | 7.199,360 | 6,697,740 | 6,212,491 | 5,773,495 |
| Balance on deposit. | 25,880,479 | 24,604,919 | 23,254,957 | 22,023,929 |

Provincial Government Savings Institutions.-Institutions for the deposit of savings are operated by the Provincial Governments of Ontario and Alberta.

Ontario.-The establishment of the Province of Ontario Savings Office was authorized by the Ontario Legislature at the 1921 Session and the first branches were opened in March 1922. Interest at the rate of 3 p.c. per annum, compounded half-yearly, is paid on accounts, and deposits are repayable on demand. Total deposits as of Mar. 31, 1966 were $\$ 81,600,000$ and the number of depositors was approximately 92,$000 ; 21$ branches are in operation throughout the province.

Alberta.-Savings deposits are accepted at 63 Province of Alberta Treasury Branches throughout the province. The total of these deposits at Mar. 31, 1966 was $\$ 84,159,852$, of which $\$ 52,130,105$ was payable on demand bearing interest at $3 \frac{1}{2}$ p.c. per annum, $\$ 15,936,618$ was in term savings for terms of from one to five years, bearing interest at 4 p.c. to $5 \frac{8}{3}$ p.c. per annum depending on the term, and $\$ 16,093,128$ was in term deposit receipts for terms of from 30 days to 365 days, bearing interest at rates comparable to those paid on the open market.

Quebec Savings Banks.-The Montreal City and District Savings Bank, founded in 1846 and now operating under a charter of 1871 had, at Oct. 31, 1966, a paid-up capital and reserve of $\$ 16,500,000$, savings deposits of $\$ 374,342,592$, and total liabilities of $\$ 393,942,115$. Total assets amounted to $\$ 393,942,115$, including $\$ 108,727,179$ of federal, provincial, municipal and other securities.

La Banque d'Économie de Québec, founded in 1848 (as La Caisse d'Économie de Notre-Dame de Québec) under the auspices of the St. Vincent de Paul Society, incorporated by Act of the Canadian Legislature in 1855 and given a federal charter by SC 1871, c. 7, had, at Mar. 31, 1966, savings deposits of $\$ 53,667,156$ and a paid-up capital and reserve of $\$ 3,500,000$. Total liabilities amounted to $\$ 60,459,860$ and total assets to a like amount.

Credit Unions.-Credit unions are savings and loan associations organized and operated on a co-operative basis by people having a common bond of association such as a parish, club, lodge or labour union, that of employment in a plant, industry or department, or residence in a rural or well-defined urban community. The number of chartered credit unions in Canada at the end of 1965 was 4,939 of which 4,364 reported a total menbership of $3,700,000$ and assets of $\$ 2,500,000,000$. Quebec, with $2,000,000$ members and assets of $\$ 1,400,000,000$, accounted for 55 p.c. of both total membership and total assets of all credit unions in Canada. Credit unions classified by bond of association on a percentage basis were: occupational 35, rural 33, urban 17 and other 15 . The number of rural associations has been declining over the past several years.

Canadian credit unions in the 1956-65 decade have continued the steady growth generally in evidence since credit unions were first organized in Quebec in the early part of the present century. Loans granted by credit unions increased by 17 p.c. in 1965 to reach $\$ 1,078,000,000$, passing the $\$ 1,000,000,000$-mark for the first time and being a 248 -p.c. increase over the corresponding figure of $\$ 310,000,000$ in 1956. Assets at $\$ 2,500,000,000$ increased by 234 p.c. and savings at $\$ 2,300,000,000$ increased by 225 p.c. in the same comparison. Membership of $3,700,000$ represented 18.6 p.c. of the total population, compared with 1,900,000 and 11.6 p.c., respectively, in 1956.

There were 28 central credit unions in 1965; these unions act as credit unions for the credit unions, mainly by accepting deposits of surplus funds from them and providing a source of funds for them to borrow when they cannot meet the demand for local loans. Most of the centrals also admit co-operatives as members. Total assets of the centrals increased 18 p.c. to $\$ 357,000,000$ and loans to members increased 43 p.c. to $\$ 221,000,000$ over the previous year. The Canadian Co-operative Credit Society serves as a central credit union for the provincial centrals and large co-operatives all across Canada. In 1965, membership consisted of four provincial centrals, four commercial co-operatives and two co-operative insurance companies. At Dec. 31, 1965, the Society had assets of $\$ 1,200,000$, loans outstanding of $\$ 850,000$ and member deposits of $\$ 650,000$.
17.-Credit Unions in Canada, 1956-65

| Year | Credit Unions Chartered | Credit Unions Reporting | Members ${ }^{1}$ | Assets ${ }^{1}$ | Loans Granted to Members |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | \$'000 | \$'000 |
| 1956. | 4,258 | 3,977 | 1, 870, 277 | 761,256 | 309,683 |
| 1958. | 4,349 4,485 | 4,044 4,156 | 2,187,494 | 852,219 $1,009,363$ | 344,791 391,084 |
| 1959. | 4,570 | 4,202 | 2,360,047 | 1,157,995 | 472,688 |
| 1960. | 4,608 | 4,345 | 2,553,951 | 1,314,290 | 481,192 |
| 1961. | 4,682 | 4,348 | 2,740,251 | 1,506,167 | 578,663 |
| 1962. | 4,760 | 4,323 | 2,879,179 | 1,673,835 | 676,312 |
| 1963. | 4,809 | 4,336 | 3,123,735 | 1,920,341 | 771,700 |
| 1964. | 4,870 | 4,362 | 3,418,033 | 2,212,690 | 918,600 |
| 1965. | 4,939 | 4,364 | 3,677,291 | 2,541,791 | 1,078,139 |

${ }^{1}$ Reporting organizations only.
18.-Summary Statistics of Credit Unions, by Province, 1965

| Province | Credit Unions Chartered | Credit <br> Unions Reporting | Members | Assets | Shares | Deposits | Loans <br> Granted to Members |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | $8{ }^{\prime} 000$ | \$'000 | \$'000 | \$'000 |
| Newfoundland. | 65 | 35 | 3,663 | 730 | 561 | 53 | 710 |
| Prince Edward Island. | 38 | 35 | 9,008 | 2,709 | 2,174 | 91 | 1,666 |
| Nova Scotia. | 186 | 178 | 84,718 | 29,650 | 22,767 | 1,354 | 25,293 |
| New Brunswick | 163 | 163 | 95, 874 | 27,480 | 24,107 | 426 | 11,800 |
| Quebec. | 1,659 | 1,530 | 2,006,526 | 1,393,512 | 186,912 | 1,115,559 | 418,200 |
| Ontario. | 1,645 | 1,299 | 732,872 | 491,899 | 321,694 | 95,533 | 298,212 |
| Manitoba. | 268 | 256 | 144,641 | 104,900 | 73,771 | 14,880 | 65,672 |
| Saskatchewa | 301 | 295 | 236,338 | 257, 240 | 180,055 | 40,473 | 129, 066 |
| ${ }_{\text {Alberta }}$ British | 311 | $\stackrel{298}{29}$ | 115, 104 | 63,880 | 49,475 | 5,501 | 38,610 |
| British Columbia | 303 | 275 | 248,547 | 169,791 | 117,583 | 22,419 | 88,910 |
| Totals. | 4,939 | 4,364 | 3,677,291 | 2,541,791 | 979,099 | 1,296,289 | 1,078,139 |

## Section 2.-Other Commercial Finance

## Subsection 1.-Trust and Mortgage Loan Companies*

Trust and mortgage loan companies are registered with either the federal or provincial governments. They operate under the Loan and Trust Companies Acts (RSC 1952, c. 170 as amended by SC 1953 c. 5 , SC 1958 c. 35 , SC 1961 c. 51 , and SC 1964-65 c. 40 ; RSC 1952 c. 272 as amended by SC 1953 c. 10 , SC 1958 c. 42 , SC 1961 c. 55 and SC 1964-65 c. 40, respectively) or under corresponding provincial legislation.

[^375]The first mortgage loan companies were established in Ontario in the 1840 s as cooperative associations to provide mortgage finance for their members. These associations evolved under legislation which was amended to give them permanent corporate status as mortgage lending institutions. They obtained their funds principally by selling mediumand long-term debentures to the public but also had the power to open deposit accounts. Trust companies were first incorporated in Ontario in the 1880s. Although the trust company legislation prevented them from borrowing funds, they had the power to accept funds in guaranteed trust accounts and invest them in specified types of assets. This feature of trust company legislation is now general throughout Canada. Although it does set up a trust rather than creditor relationship between trust companies and the holders of their certificates and deposits, the trust companies operate as financial intermediaries in the same way as mortgage loan companies, chartered banks or savings and other financial institutions. A more important special characteristic of trust companies is that they are the only corporations in Canada with power to act as trustees for property interests and to conduct other fiduciary business. In this capacity they act as executors, trustees and administrators under wills or by appointment, as trustees under marriage or other settlements, as agents in the management of estates of the living, as guardians of minor or incapable persons, as financial agents for municipalities and companies, as transfer agents and registrars for stock and bond issues, as trusteea for bond issues and, where so appointed, as authorized trustees in bankruptcies.

Mortgage loan and trust companies were established and grew rapidly under provincial legislation in the late nineteenth and early twentieth centuries. Some companies were chartered by special Acts of Parliament but it was not until 1914 that federal legislation was passed and the Federal Government began to regulate trust and loan companies registered under its Acts. There are now eight federal trust companies and 13 federal loan companies. The Superintendent of Insurance examines these companies and also, by arrangement with the provinces, trust and loan companies incorporated in Nova Scotia, and trust companies incorporated in New Brunswick and Manitoba. Companies must be licensed by each province in which they wish to operate.

Although there are many differences among the various federal and provincial Acts, the broad lines of the legislation are common. In their intermediary business the companies have the powers mentioned above to borrow or, in the case of trust companies, accept funds in guaranteed accounts subject to maximum permitted ratios of these funds to shareholders' equity. The funds may be invested in specified assets which include first mortgages on real property, government securities and the bonds and equity of corporations having established earnings records. The companies may grant loans on the security of such bonds and stocks but may not make unsecured commercial and personal loans. Trust and loan companies are not required to hold specified cash reserves, as are the chartered and savings banks, but there are broadly defined "liquid asset" requirements in a number of the Acts. The investment powers of federal companies were broadened in 1965 , when the maximum permitted value of conventional mortgage loans was raised from $66{ }_{3}$ p.c. to 75 p.c. of the appraised value of the property, the limit on common stock holdings was raised from 15 p.c. to 25 p.c. of total assets and the quality tests for common stocks eligible for investment were relaxed.

The trust and mortgage loan companies have been substantial members of the Canadian financial system since their early years. In the 1920 s they held about one half of the private mortgage business in Canada but during the 1930s and World War II their growth rate fell off sharply because of the impact of the depression of the 1930 s and World War II on the mortgage business. In the years since the War the re-emergence of strong demands for mortgage financing and the willingness of many trust and loan companies to compete aggressively for fuads have led to sustained rapid expansion. These developments may be traced in the annual statistics published by the Superintendent of Insurance and provincial authorities, and in the quarterly balance sheet data compiled by the Dominion Bureau of Statistics.

According to the DBS figures, the mortgage loan companies had assets before investment in subsidiaries of $\$ 2,216,000,000$ at the end of 1965 compared with $\$ 1,886,000,000$ a year earlier. Their holdings of mortgages amounted to $\$ 1,817,000,000$ or 82 p.c. of total assets. To finance their investments, these companies had borrowed $\$ 1,365,000,000$ or 62 p.c. of their total funds by the sale of debentures and $\$ 366,000,000$ from deposit accounts.

At the end of 1965, the "intermediary" assets of trust companies in the DBS survey were $\$ 3,422,000,000$ compared with $\$ 2,860,000,000$ a year earlier, for an increase of 20 p.c. In addition, the companies had a total of $\$ 12,588,000,000$, at book values, under administration in estate, trust and agency accounts on Dec. 31, 1965.* Trust companies, while not specializing in mortgage financing to the same extent as loan companies, in recent years have been putting a high proportion of their funds into these investments with the result that mortgages were 51 p.c. of their assets at the end of 1965 compared with 35 p.c. five years earlier. The trust companies had $\$ 1,973,000,000$ of term certificates outstanding and $\$ 1,119,000,000$ in deposit accounts in December 1965, accounting for over 90 p.c. of total funds. About one half of the deposits were in chequable accounts. There is considerable variety among the trust companies and a few have developed a substantial shortterm business, raising funds by issuing certificates for terms as short as thirty days and also operating as lenders in the money market. Nevertbeless, it remains true that the main business of the trust companies in their intermediary role, as of the mortgage loan companies, is to channel savings into mortgages and other long-term investments.

More complete and up-to-date financial information may be found in quarterly balance sheet statements published by the Dominion Bureau of Statistics and the Bank of Canada, the reports of the Superintendent of Insurance on Loan and Trust Companies, the reports of provincial supervisory authorities and in the Report of the Royal Commission on Banking and Finance as well as submissions and evidence put before the Commission. The annual figures given in Tables 19-22 are from the Department of Insurance report.

* Department of Insurance figure.


## 19.-Operations of Provincial and Federal Loan and Trust Companies, as at Dec. 81 , 1364 and 1s65

| Item | 1964 |  |  | 1965 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Provincial Companies | Federal Companies | Total | Provincial Companies | Federal Companies | Total |
|  | \$ | \$ | \$ | * | \% | \$ |
| Loan Companies- |  |  |  |  |  |  |
| Assets (book values). | 456, 793,428 | 980,794,295 | 1,437,587,723. | 568,253,970 | 1.124,663,414; | 1,892,917,384 |
| Liabilities to the public | 367,671,320 | 889,272,258 | 1,256, 943.578 . | 473, 155, 125 | 1,017,301.322 | I,490,456,447 |
| Capital paid up........ | 41,524,959 | 37,810,908 | 79, 135, 865 | 44,558,698 | 40,345,920 | 84,904,618 |
| Surerve and contingeney funds.. | 38,378,679 | 52,104, 555 | 90,483, 234 | 41,574, 505 | 64, 316.956 | 105,891,461 |
| Total liabilities to shareholders. | 89, 122,108 | 91,522,036 | 180,644, 144, | $85,965,644$ 95 | 107, ${ }^{2,1692,296}$ | 202,460, ${ }^{11,687}$ |
| Gross profits realized during year | 8,382,588 | 12,159, 622 | 20,542,210 | 8,949,284 | 14,168,584 | 23,117,888 |
| Trust Companies- |  |  |  |  |  |  |
| Company turds | 200, 303,367 | 97,712,777 | 298,016, 144 | 204,768,768 | 106,112,516 | 310,881,285 |
| Guaranteed funds. | 1,642,678,032 | 967,843, 662 | 2,610,521,694 | 2,039,499,564 | 1,132,113,512 | 3,171,613,076 |
| Totals, Assets | 1,842,981,399 | 1,065,556,439 | 2, 808,537, 838 | 2,244,268,333 | 1,238,226,028 | 3,482, 494,381 |
| Estates, hrust, and agency funds. | 8,542,766,048 | 2,728,744,451 | 11,271,510,499 | 9,418,621,484 | 3.168,647,670 | 12,588,269,154 |
| Capital paid up. . . . . . . . . . . . | 60,876,093 | 30.805,690 | 91,681,783 | 65,504, 315 | 32,105,960 | 97, 610,275 |
| Reserve and contingency funds. Sarplus | 93,464, 883 | 58,231,889 | 151,696,772 | 102,664. 506 | 64, 475, 043 | 167, 139,549 |
| Gross profits realized during | 11,014,401 | 3,154,613 | 14.169,014 | 10,886,848 | 3,461,325 | 14,327,974 |
| year ${ }^{\text {. }}$. | 19,598,920 | 13,937,980 | 33,536,910. | 20,359,714 | 14,232,586 | 34,592,300 |

[^376]
## 20.-Assets and Labilities of Loan Companies, 1961-65

| Item | Chartmred by Government of Canada |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1961 | 1062 | 1963 | 1984 | 3085 |
|  | \$ | \$ | \$ | \$ | \$ |
| Assets |  |  |  |  |  |
| Real eatate ${ }^{2}$. | 11,315,716 | 13,507,438 | 15, 816,341 | 16,380,062 | 18,288,365 |
| Mortgages and agreements of sale. | 425,789,259 | 506,731.590 | 597.175,335 | 754, 192,719 | 888, 173,569 |
| Collatera! loans. | 1,434,676 | 6,901, 896 | 2,627,559 | 1,405,009 | 9,334, 381 |
| Bonds. | 79,903,391 | 85,566,281 | 98, 406,751 | 113, 407,076 | 107,925,769 |
| Stocks | 29,313,098 | 30,317,279 | 37,728,286 | 38,586,718 | 42,310,613 |
| Cash. | 9,881,139 | 12,301,988 | 11,588, 055 | 40,475,528 | 40,030,753 |
| Totals, Assets ${ }^{3}$. | 566,511,576 | 464,516,472 | 775,562,275 | 984,794,285 | 1,124,663,414 |
| Llabilitles |  |  |  |  |  |
| Liabilities to Shareboldera- |  |  |  |  |  |
| Capital paid up | 20,410,770 | 23, 048,264 | 28,389,518 | 37,610,906 | 40,345,920 |
| Reserves...... | 38.914,179 | 42,616,400 | 48, 619,146 | 52,104,555 | 64,316,956 |
| Totsls, Liabilities to Shareholders ${ }^{4}$. | 60,183,500 | 66,552,229 | 78,812,090 | 91,522.036 | 107,362,092 |
| Ligbilities to the PublicDebentures. | 322,987,934 | 389,158,825 | 429,423,571 |  |  |
| Deposita... | 168,310,007 | 194, 904,131 | 245,513,968 | 292,504,152 | 325,916,00t |
| Totals, Liabilitiee to the Publics.... | 506,328,076 | 602.964.243 | 696,750, 185 | 889,272,259 | 1,017,301,322 |
| Totals, Liabllities. . . . . . . . . . . | 566,511,576 | 66\%,516,472 | 775,542,275 | 980,794,295 | 1,124,683,414 |

Ceartired by Proyincrgo


[^377]| Item | Ceartered ay Government of Canada |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1961 | 1962 | 1903 | 1964 | 1965 |
|  | \% | \% | * | * | \$ |
| Assets |  |  |  |  |  |
| Company Funds ${ }^{2, \lambda}$. | 59,858,136 | 72,448,013 | 81,472,495 | 97,712,777 | 106,112,515 |
| Real extated . . . . . | 7,334,471 | 7,980,688 | 10,604, 841 | 13,119.738 | 13,055,759 |
| Mortgages and agreements of asle. | 9,398,702 | 11,355,243 | 13,792,420 | 17. 413,859 | 15,939,562 |
| Coliateral loans. | ${ }^{65}$ 676.996 | 750,375 | ${ }^{621,097}$ | 1,188,356 | 1,045,889 |
| Stocks. | 9,615.703 | 13.039,069 | 15.588, 351 | 13,231,610 | 19,453,909 |
| Cash... | 5.537,837 | 6.128.310 | 5,487, 172 | 5,923,372 | 8.741,852 |
| Guaranteed Funds ${ }^{\text {2 }}$ a | 515,401,875 | 832,659,981 | 798,722,300 | 967,843,683 | 1,132,113,512 |
| Mortgages sud agreements of sale | 278, 153,089 | 383, 434,559 | 491,831,983 | 619,665,772 | 775. 470.113 |
| Collateral loans., | 11,556,400 | 12,327,614 | 13.531,204 | 14,585,851 | 6,468,738 |
| Bonds.. | 210,620,896 | 218.251, 215 | 270,697,869 | 303, 672, 054 | 325,893.504 |
| Stocks | 4,426,981 | 4,178.170 | 1.814.009 | 3,703.501 | 299,897 |
| Casb. | 9,583,905 | 8,186,938 | 13,413.319 | 16,867, 182 | 12,336,360 |
| Liabtities |  |  |  |  |  |
| Company Funds ${ }^{5}$ | 53,858,136 | 72,443,013 | 81,472,495 | 97,712,777 | 106,112,516 |
| Capital paid up. | 22,004,140 | 24, 706,315 | 26.400 .185 | 30,805.690 | 32, 105,960 |
| Reserves.. | 32,823,231 | 42, 135,004 | 48,223,038 | 58,231,889 | 64, 475, 043 |
| Guaranteed Funds-'Trust Deposits and Certifleates. | 515,401,875 | 632,659,881 | 798,722,300 | 967,843,662 | 1,132,112,512 |
|  | Chartergd by Provinces ${ }^{\prime}$ |  |  |  |  |
|  | 1961 | 1562 | 1963 | 1964 | 1965 |
|  | \$ | \% | \$ | \$ | \$ |
| Assets |  |  |  |  |  |
| Company Funds ${ }^{\text {2,3 }}$. | 120,352,820 | 140,787,304 | 162,201,058 | 204,303,367 | 204,768,768 |
| Real estate ${ }^{4}$. | 14,186,725 | 17,966,216 | 18,067,782 | 21,198,596 | 20,678, 341 |
| Mortgages and agreements of asle | 10,007,435 | $8,673,612$ | 13,758,082 | 21,929,416 | 17,220.404 |
| Collateral loans. | 16.277,588 | 12,482,154 | 11,184.235 | 8,290,416 | 11,277,487 |
| Bonds. | 24, 104,945 | 23,049,533 | 26,496, 161 | 43,774,799 | 38,712,032 |
| Stocks. | 48,001, 106 | 53,254.583 | 55.633, 197 | 82.751,445 | 68,073,051 |
| Cash... | 7,245,667 | 10,849,812 | 18,667,903 | 13,861,802 | 10,231,483 |
| Guaranteed Funds ${ }^{2}$ <br> Mortgages and agreements of sale. <br> Collateral loana. <br> Bonds. <br> 8tocks. <br> Cash. | 897,871,495 | 1,061,205,513 | 1,305,530,825 | 1,642,678,037 | 2,439,498,564 |
|  | 329,404.454 | 432, 117,245 | 1579,166,856 | 799,145,303 | 1,115,668,354 |
|  | 30,809,753 | 62.187,479 | 98.609,361 | 78,802,569 | 97,530,525 |
|  | 481.645.708 | 524,673,307 | 562.615,974 | 682,254,998 | 729,794,297 |
|  | 4.642,875 | 4.571.162 | 6.499.113 | 5,205,930 | 8.887, 842 |
|  | 23,650,481 | 25,177,931 | 33,855,327 | 45,547,824 | 63,654,014 |
| Liabllities |  |  |  |  |  |
| Company Funds ${ }^{\text {b }}$ | 179,352,824 |  | 162, 291,058 |  | 204,768,769 |
| Capital paid up | 32,945, 340 | 36,917,543 | 43,271,752 | $60.876,093$ | 65,504,315 |
| Reserveg..... | $60.400,074$ | 71,507.051 | 87,594, 226 | 93, 464,883 | 102,664,506 |
| Guaranteed Funds-Trust Deposits and Certifleates. | 899,871,495 | 1,061,205,513 | 1,305,530,885 | 1,642,678,032 | 2,039,499,564 |

[^378]22.-Estates, Trust and Ageney Funds of Trust Companies, Cbartered by or Supervised by the Federal Government and by Provincial Governments, as at Dec. $\mathbf{3 1}, \mathbf{1 9 5 6 - 6 5}$

| Year | Federal Companies: | Provincial Companies? | Total | Year | Federal Companies ${ }^{1}$ | Provincial <br> Compatiess | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\$$ | \$ | \% |  | \$ | \$ | \% |
| 1956. | 815,367.349 | 4,318,560,879 | 5.133.928, 228 | 1961. | 1,948,445,628 | 6.170.097, 541 | 8,118,543,169 |
| 1957. | 880, 560.559 | 4. $695.817,867$ | 5,582, 378, 428 | 1962 | 2,195, 628, 230 | 6, 818,580,561 | 9,014, 208, 791 |
| 1958. | 990,078,180 | 5,328.920,074 | 6, 318,998, 234 | 1963 | 2. $371,284,565$ | 7,594,738, 180 | 9,966.022,745 |
| 1959. | 1,127,767,607 | 5,774,745.226 | 6.902,512,833 | 1964 | 2.728,744,451 | 8,542,768,048 | 11,271,510,499 |
| 1960. | 1,246,508,258 | 6. $143,921,379$ | 7,390,429, 637 | 1985. | 3,168,647,67e | 9,419,621,484 | 12,588, 209, 154 |

tIncludes companies chartered by the Governments of Nova Scotia, New Brunswick and Manitoba which, by arrangement, are inspected by the federal Department of Insurance. 2 Excludea provincial companies of Nova Scotia, New Brunswick and Manitobs which are included with federal companies.

## Subsection 2.-Licensed Small Loans Companies and Licensed Money-Lenders*

Small loans companies and money-lenders are subject to the Small Loans Act (RSC 1952, c. 251, as amended by SC 1956, c. 46). This Act, first passed in 1939, sets maximum charges on personal cash loans not in excess of $\$ 1,500$ and is administered by the Department of Insurance. Lenders not licensed under the Act may not charge more than 1 p.c. per month. Those wishing to make small loans at higher rates must be licensed each year by the Minister of Finance under the Small Loans Act. The Act allows maximum rates, including charges of every kind, of 2 p.c. per month on unpaid balances not exceeding $\$ 300$, I p.c. per month on the portion of unpaid balances exceeding $\$ 300$ but not exceeding $\$ 1,000$ and one half of 1 p.e. on any remainder of the balance exceeding $\$ 1,000$. Loans in excess of $\$ 1,500$ are not regulated and lenders operating entirely above this limit, and the larger loans of licensed lenders are thus exempt from the Act. Nor does the Act regulate charges for the instalment financing of sales. Prior to Jan. 1, 1957, the Act applied only to loans of $\$ 500$ or less and the maximum rate was 2 p.e. per month.

At the end of 1965 , there were six small loans companies and 83 money-lenders licensed under the Act. Small loans companies are incorporated by special Acts of the Parliament of Canada, the first of them commencing business in 1928; the money-lenders inciude provincially incorporated companies and a few partnerships and individuals. Many of the small loans companies and money-lenders are affiliated with other financial institutions, principally Canadian sales finance companies and American finance or loan companies, and these subsidiary companies account for a high proportion of the total business of licensed lenders. The affiliations with sales finance companies reflect the close relationship between instalment financing and the consumer loan business. The Dominion Bureau of Statistics publishes quarterly balance sheets for sales finance and consumer loan companies as a whole and does not attempt to distinguish two groups within the industry. $\dagger$

The subsidiary small loans companies and money-lenders obtain most of their funds through their parent companies. A few of the larger companies have supplemented their bank loans by selling short-term paper in the market but the amount has beed small compared with the short-term market borrowing of the sales finance companies. The smaller independent companies rely maialy on their shareholders and on borrowing from the cbartered banks.

The annual figures of assets and liabilities given in Table 23 for 1962-65 are from the Department of Insurance report. $\dagger$

[^379]23.-Assets and Liabilities of Small Loans Companies and Money-Lenders, 136\%-65

| Assets and Liabilities | 1962 | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ | 8 |
| Assets. | 677,428,408 | 735,600,587 | 797, 7771 , 316 | 899,510,599 |
| Small loan badances. | 482, 246,944 | 530,030, 009 | 575, 126,976 | 627,526, 360 |
| Balapces, large loans and other cont | 179,888.234 | 187,336, 181 | 203,473,461 | 238, 469,695 |
| Cash. | 5,924,32. | 7,999,302 | 6,546,620 | 10,602,031 |
| Other. | 9,368,907 | 10,294,215 | 12,124,269 | 22,912.506 |
| Labllities. | 677,428,408 | 735,664,587 | 797,271,316 | 885,510,592 |
| Borrowed money | 553,914,368 | 598, 496,241 | 647,138,005 | 728,802,326 |
| Reserves for loeses | 13,202,526 | 14,962.448 | 17,895.299 | 19,843,853 |
| Paid-up capital. | 45,030,972 | 48,358,329 | 49,044,243 | 51,749,884 |
| Surplus paid in by shareholders | 407.390 | 449,885 | 443,370 | 5,443,994 |
| Ofarned surplus. | 29,462,148 | $34,409,767$ $38,983,907$ | 37,671,201 | 38,817,315 |
| Other........ | 35, 211,004 | 38,983,907 | 45,079,198 | 54,853,220 |

The combined companies showed an increase in the amount of business done in 1965 compared with 1964. The number of small loans made to the public during 1965 increased from $1,469,694$ to $1,556,294$ or by about 6 p.c., and the amount of such loans rose from $\$ 837,636,532$ to $\$ 904,651,318$ or by about 8 p.c. The average small loan made was approximately $\$ 581$ compared with $\$ 542$ in 1964 . At the end of the year, small loans outstanding numbered $1,245,921$ for an amount of $\$ 627,526,360$ or an average of $\$ 504$ per loan; comparable figures for 1964 were $1,165,236, \$ 575,126,976$ and $\$ 494$, respectively.

Grass profits of small loans companies and money-lenders before income taxes and before taking into account any increase or decrease in reserves for bad debts decreased from $\$ 29,829,874$ in 1964 ( $\$ 19,205,033$ being the proit on small loans and $\$ 10,624,841$ the profit on business other than small loans) to $\$ 27,521,976$ in 1965 ( $\$ 16,633,703$ being the proft on small loans and $\$ 10,888,273$ the profit on business other than small loans).

## Subsection 3.-Foreign Exchange

The dollar, established officially as the currency of the united provinces of Canada on Jan. 1, 1858, and extended to cover the New Dominion by the Uniform Currency Act of 1870 , was defined as $15 / 73$ of the British gold sovereign.* That is, the par rate of exchange between the dollar and the pound sterling was fixed at $\$ 4.866$, making the Canadian currency the equivalent of the United States dollar at parity. With minor variations between the import and export gold points representing the cost of shipping gold in either direction, the value of the pound sterling in Canada remained at this level until the outbreak of World War I. The United States dollar, on the other hand, was at a discount in terms of Canadian funds for the first eleven years after Confederation since it was not redeemable in gold from February 1862 to January 1879. On the basis of gold equivalents it would appear that the greatest monthly average discount on the United States dollar after Confederation was approximately 31 p.c., reached in August 1868 . From 1879 to 1914 the dollars of the two countries remained at par, varying only within the gold points or under $\$ 2$ per thousand.

On the outbreak of World War I, Canada and Britain suspended the gold standard. For some weeks both the pound and the Canadian dollar rose to a premium in New York. Subsequently both fell back with the pound going to a slight discount. In January 1916 the pound was officially pegged at $\$ 4.76$ in American funds. This level was maintained with the help of funds realized by sales of United States securities owned by residents of Britain, by borrowing in the United States and, after the American entry into the War, by the United States Government financing Allied purchases in that country.

[^380]From 1915 to the end of 1917, fluctuations in the rate of exchange between the Canadian and United States dollars did not exceed 2 p.c. on either side of parity; the pound was stable in terms of United States dollars during this period. In 1918 the Canadian dollar began to weaken. After the pound was unpegged in 1919, the Canadian dollar declined further and in 1920 it fell to 82 cents in New York with sterling going as low as $\$ 3.18$.

By the latter half of 1922 the Canadian dollar had returned practically to par in New York. Despite some further weakness in sterling, the dollar remained close to that level during the next two years, averaging 98.04 and 98.73 cents in terms of the United States dollar in 1923 and 1924, respectively, and fluctuating between a discount of about 3.6 cents and a premium of approximately 0.4 cents. After Britain resumed gold payments in April 1925, the range of fluctuation of the Canadian dollar narrowed further. From Canada's return to the gold standard in the period July 1, 1926 to January 1929, the exchange rate remained within the gold points. The Canadian dollar then went to a slight discount in New York. With the exception of the period July to November 1930, when it went to a small premium in New York, the dollar remained below parity until Britain abandoned the gold standard in September 1931. After that month the pound sterling depreciated sharply and the Canadian dollar followed, reaching lows* in New York of 80.5 cents in December 1931 and 82.6 cents in April 1933.

Following the prohibition of gold exports in the latter month by the United States, the pound and the Canadian dollar strengthened rapidly in terms of American funds. By November 1933 both currencies had reached a premium in New York. Meanwhile, in a series of steps beginning with permitting the export of newly mined gold in August 1933, the United States moved toward resumption of the gold standard. As of Feb. 1, 1934, the United States Treasury undertook to buy all gold offered at $\$ 35$ per ounce. After that the exchange rate between the Canadian and United States dollars stabilized. Until the outbreak of war in 1939 much of the trading was conducted within one cent of parity although the Canadian dollar in New York did go as high as 103.6 cents (September 1934) and as low as 98.0 cents (September 1938).*

On the outbreak of World War II in September 1939, Britain and other sterling countries introduced foreign cxchange control involving fixed buying and selling rates of $\$ 4.02 \frac{1}{2}$ and $\$ 4.03 \frac{1}{2}$, respectively, in terms of the United States dollar. The Canadian dollar in New York declined until Sept. 16, 1939, when the Government instituted foreign exchange control $\dagger$ in Canada and established fixed buying and selling rates of $\$ 1.10$ to $\$ 1.11$ for the U.S. dollar and $\$ 4.43$ to $\$ 4.47$ for sterling. As compared with previous months, the depreciation of the Canadian dollar in terms of United States funds was approximately half as great as that of the pound sterling.

Apart from a minor adjustment on Oct. 15, 1945, when selling rates for U.S. dollars and sterling were lowered to $\$ 1.10 \frac{1}{2}$ and $\$ 4.45$, respectively, the official rates for the Canadian dollar remained unchanged until July 5, 1946. At that time the rate on the U.S. dollar was restored to par, with buying and selling rates for that currency of $\$ 1.00$ to $\$ 1.00 \frac{1}{2}$ and for sterling $\$ 4.02$ to $\$ 4.04$. These rates continued in effect until Sept. 19, 1949 when, following a 30.5 -p.c. reduction by Britain in the value of sterling to $\$ 2.80$ U.S. (an action which was paralleled in varying degrees by numerous other currencies), Canada returned to the former official rates of $\$ 1.10$ and $\$ 1.10 \frac{1}{2}$ for United States funds. Sterling was quoted at $\$ 3.07 \frac{1}{4}$ and $\$ 3.08 \frac{3}{4}$ on the basis of the New York cross rate.

On Sept. 30, 1950, the Minister of Finance announced that official fixed foreign exchange rates which had been in effect at varying levels since 1939 would be withdrawn effective Oct. 2, and that the rate would henceforth be determined in the market for foreign exchange. This policy was carried out within the framework of exchange control until Dec. 14, 1951, at which time the Foreign Exchange Control regulations were revoked by the Governor in Council, terminating the period of exchange control that had prevailed in Canada since 1939. The Foreign Exchange Control Act was repealed in 1952. On

[^381]May 2, 1962, the Minister of Finance announced that the Canadian dollar was being stabilized at a fixed par value of $92 \frac{1}{2}$ cents in terms of United States currency. This action was taken with the concurrence of the International Monetary Fund and, in accordance with the Articles of Agreement of that organization, the Government of Canada undertook to maintain the Canadian exchange rate within a margin of 1 p.c. on either side of the established par value. The movements of the U.S. dollar in Canadian funds from January 1957 to December 1966 are shown in Table 24.

## 24.-Price of the United States Dollar in Canada, by Month, 1957-66

Nors.-Ratea publisbed by Bank of Canada. Noon average market rate for businesa days in period.
(Canadian centa per U.S. dollar)

| Month | 1957 | 1958 | 1959 | 1960 | 1961 | 1982 | 1983 | 1984 | 1965 | 1966 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| January | 98.07 | 88.47 | 96.69 | 95.31 | 99.29 | 104.50 | 107.71 | 108.02 | 107.38 | 107.46 |
| February | 05.83 | 98.10 | 97.49 | 95.17 | 98.96 | 104.88 | 107.76 | 108.09 | 107.58 | 107.63 |
| March. | 95.61 | 97.73 | 96.98 | 95.09 | 98.73 | 104.94 | 107.80 | 108.05 | 108.11 | 107.62 |
| April. | 95.97 | 97.06 | 96.35 | 96.29 | 98.89 | 104.98 | 107.68 | 108.09 | 107.92 | 107.70 |
| May. | 95.56 | 96.69 | 96.28 | 97.81 | 98.75 | 108.23 | 107.72 | 108.09 | 107.95 | 107.67 |
| June | 95.32 | 96.18 | 95.88 | 98.23 | 100.55 | 108.79 | 107.82 | 108.09 | 108.23 | 107.65 |
| fuly. | 85.09 | 96.00 | 95.74 | 97.84 | 103.41 | 107.89 | 107.97 | 108.13 | 108.35 | 107.48 |
| August | 94.80 | 96.46 | 95.44 | 96.98 | 103.15 | 107.76 | 108.28 | 107.87 | 107.84 | 107.51 |
| Septemb | 85.92 | 97.68 | 95.15 | 97.25 | 103.08 | 107.68 | 107.98 | 107.61 | 107.64 | 107. 62 |
| October | 96.47 | 97.07 | 94.77 | 97.85 | 103.03 | 107.60 | 107.78 | 107.53 | 107.51 | 107.93 |
| Novemb | 96.24 | 96.83 | 95.03 | 97.67 | 103.57 | 107.68 | 107.76 | 107.39 | 107.49 | 108.20 |
| Decembe | 97.74 | 96.46 | 95.12 | 98.24 | 104.27 | 107.60 | 107.93 | 107.46 | 107.58 | 108.31 |
| Annual Averas | 95.88 | 97.06 | 95.94 | 56.97 | 101.32 | 106.88 | 107.85 | 107.86 | 107.84 | 107.73 |

## 25.-Canada's Official Holdings of Gold and United States Dollars, as at Dec. 31, 1957-66

Nore.-Holdings comprise gold, U.S. dollars and short-term secwities of the U.S. Government held by the Exchange Fund Account, other government accounts and net holdings of the Bank of Canada.
(Millions of U.S. dollara)

| Year | Gold | U.S. <br> Dollars | Total | Year | Gold | U.S. Dollars | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1957. | 1.100.3 | 728.0 | 1,828.3 | 1982. | 708.5 | 1,830,9 | 2,539.43 |
| 1958. | 1,078. 1 | 861.0 | 1,939.1 | 1963 | 817.2 | 1,777.8 | 2,595.02 |
| 1959. | 959.61 | 909.6 | 1,869.21 | 1964. | 1,025.7 | 1.848.6 | $2.674 .3{ }^{3}$ |
| 1960.. | 885.3 | 943.9 |  | 1965. | 1.150 .8 | 1,513.7 | 2,664. $5^{3}$ |
| 1961.. | 946.2 | 1, 109.6 | 2,055.8 | 1886 | 1,045.6 | 1,190.3 | 2.235 .92 |

1 On Oct. 1, 1959. $862,500,000$ representing the gold portion of Canads's increased quota was translerred to the International Monetary Fund.
${ }^{2}$ Includes the proceeds of a drawing equivalent to U.S. $\$ 300,000.000$ which Was made from the International Monetary Fund in June 1962 and which was outstanding at yearend. The amount of Canada's net obligation to the International Monetary Fund was $\$ 275,700,000$ at Dec. 31 , 1962 and $\$ 196,000.000$ at Dee. 31, 1963.
${ }^{3}$ Canada's net creditor position with the International Monetary Fund was $\$ 00,000,000$ at
Dec. 31, 1964, $\$ 215,900,000$ at Dec. 31, 1965 and $\$ 263,500,000$ st Dec. $31,1966$.

## Subsection 4.-The Bond Market*

Sales of Canadian Bonds.-Canadian borrowers, both government and corporate, raised a net total of $\$ 1,783,000,000$ on the bond market in 1965, considerably less than the $\$ 2,839,000,000$ raised in 1964 . Government revenues rose relative to expenditures, reducing government demands on the market; corporations had an increased need for funds but put greater emphasis on other forms of borrowing.

The Federal Government retired $\$ 52,000,000$ of its outstanding securities during 1965. There was a budgetary surplus of $\$ 70,000,000$ for the year and non-budgetary cash requirements (primarily for loans and advances) were almost covered by non-budgetary receipts

[^382]from repayment of loans, annuity and pension funds, and other sources. There was a marked change in the type of debt outstanding with marketable bonds being retired and savings bonds issued.

Both provincial and municipal governments increased their debt outstanding by smaller amounts in 1965 than in 1964. Part of this decline was made possible by increases in bank loans of $\$ 29,000,000$ to provincial governments and $\$ 158,000,000$ to municipal goveraments.

Corporation bonds (including short-term paper of finance and other corporations) issued during 1965 amounted to $\$ 850,000,000$, a decline from $\$ 1,029,000,000$ in 1964 . Business capital expenditures increased by almost $\$ 2,000,000,000$ while savings increased by much less, resulting in a sharply increased need for funds. However, as a result of the United States guidelines and the Atlantic Acceptance Corporation default on its obligations, many corporations, particularly financial corporations, were forced to rely less on the money market in 1965 than in 1964. Although bond issues in 1965 amounted to $\$ 1,122,000,000$, a substantial increase from issues in the previous year, there was a net redemption of finance company paper and other short-term commercial paper. Bank loans to sales finance companies increased by 76 p.c. in 1965 and to other corporations by 14 p.c. Foreign direct investment in Canada also increased substantially.

Bonds Outstanding.-Total government and business bonds outstanding were estimated at $\$ 48,235,000,000$ at Dec. 31,1965 , an increase of 25 p.c. over the $\$ 38,533,000,000$ outstanding at the end of 1961 . The largest increase of 45 p.c. during the period was in provincial bonds but part of this increase was due to the purchase by the Province of Quebec in 1963 of private hydro-electric companies operating in that province, and the subsequent replacement of corporation bonds by provincial government guaranteed bonds. The total of outstanding bonds includes treasury bills, finance company paper and other short-term commercial paper. It does not include the term deposits, certificates and debentures of trust and mortgage loan companies which totalled over $\$ 3,000,000,000$ at the end of 1965. Also excluded is mortgage debt, which the Central Mortgage and Housing Corporation estimated to be over $\$ 18,000,000,000$ at the end of 1964.

## 2f.-Net New Issues of Canadian Bonds, 1st1-65 and Bonds Outstanding, as at Dec. 31, 1541-65

Note.-Federat, provincial and municipal bonds include direct and guaranteed issues; corporation bonds inclede finance company and otber short-term commercial paper; "other bonds" include bonds of religious and otber institutions and a small amount of foreign bonds payable in Carsdian dollars.

| Item | 1961 | 1962 | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Bonde Issued |  |  |  |  |
|  | \$'000,000 | 8'000,000 | \$ 0000000 | \$ ${ }^{\prime} 000,000$ | \$ 600,000 |
| Government of Canada. | 890 |  | 827 | $457$ |  |
| Treasury bills..... | -100 | 288 | 75 | $-100$ | 10 -995 |
| Marketable bonds... | 347 | \%88 | 878 | 55 509 | - 895 |
| Non-marketable bonds | 645 944 | 489 709 | 478 | 9042 | 743 |
| Municipal Government. | 317 | 230 | 334 | 401 | 203 |
| Corporations........... | 342 | 626 | 706 | 1,029 | 850 |
| Finsince company paper. | - 61 | 144 | 166 | 259 | $-158$ |
| Other short-term paper. | ${ }^{688}$ | 58 | -45 | 46 | $-180$ |
| Other bonds. | ${ }^{38}$ | $4{ }^{48}$ | 688 29 | 11 | , 39 |
| Totals. | 2,521 | 2,374 | 2,797 | 2,833 | 1,788 |
|  |  | Bonds | tratandino | Dec. 31 |  |
|  | \$'000,000 | \$ 000,000 | \% 000,000 | 8'000,000 | \$000,000 |
| Government of Canada. | 18,636 | 19,448 | 20.276 | 20,733 | 20,681 11,895 |
| Pravincial Government. | 8,211 | 9,051 | 10,206 | 11,149 | 5,301 |
| Municipal Government. | 4,058 | ${ }_{7}^{4,363}$ | 8, 8298 | 8,013 8,013 | 9,978 |
| Oorporate.... | 7, 293 | 7,962 302 | 8,331 | ${ }_{342}$ | 380 |
| Totals.. | 38,533 | 41,126 | 43,734 | 46,385 | 48,735 |

Distribution of Bond Holdings. -Table 27 shows the estimated distribution, as at Dec. 31, 1964, of government, corporate, and other bonds among the major purchasers of securities. Of the total, 18 p.c. were held by non-residents and the largest identified holders were chartered banks with 11 p.c., life insurance companies with 10 p.c., and trusteed pension plans with 8 p.c. The "All other resident" category, which contains all holdings not allocated to specific holders, had $\$ 15,022,000,000$ or 32 p.c. of the total. Of this amount, however, $\$ 5,866,000,000$ consisted of Government of Canada savings bonds.

## 27.-Estimated Distribution of Bond Holdings, as at Dec. 31, 1964

Nors.-Federal, provincial and municipsl bonds include direct and guaranteed issues; corporation bonds include finance company and other ehort-term commercial paper; "other bonds" include bonds of religious and other institutions and a small amount of foreign bonds payable in Canadian dollars.

| Holder | Government of Canada Bonds | Provincial Government Bonda | Municipal Government Bonds | Corporate ${ }^{1}$ and Other Bonds | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | $8{ }^{\prime} 000,000$ | \$'000,000 | \$'000,000 | \$ 000,000 | \$'000.000 |
| Bank of Canada. | 3,115 | - | - | 177 | 3,292 |
| Chartered banks. | 3,705 | 372 | 307 | 487 | 4,871 |
| Government of Canada. | 769 |  | - |  | 769 |
| Provincial governments. | 550 | 1.413 | 310 | 167 | 2,440 |
| Monicipal governments. | 76 | 114 | 403 | ${ }^{2}$ | ${ }^{595}$ |
| Lite insurance companiea. | 611 | 1.075 | 727 | 2,175 | 4,588 |
| Other insurance companies. | 530 | 332 | 151 | 187 | 1,200 |
| Quebec savings banks..... | 31 505 | 78 | 33 | 28 | 168 |
| Trusteed pension plans... | 364 | 1,868 | 594 | 892 | 1,090 |
| All other resident. . | 9,404 | 2,920 | 1,155 | 1,543 | 15.022 |
| Notrresident | 1,073 | 2,772 | 1,278 | 3,459 | 8,582 |
| All Hohders. | 20,733 | 11,149 | 5,088 | 9,355 | 46,335 |

[^383]
## PART II.-INSURANCE*

## Section 1.-Life Insurance

Life insurance in force in Canada with companies registered by the Federal Government (exclusive of fraternal benefit societies) amounted to $\$ 69,656,000,000$ at the end of 1965 , an increase of $\$ 6,984,000,000$ during the year. The ratio of gain in business in force, expressed as a percentage of the amount in force at the beginning of the same year, was 11.1 p.c. in 1965.

|  | $\boldsymbol{Y}$ eor | In Force at Beginning of Year | Increase in Force for the Year | Percentage Gain |
| :---: | :---: | :---: | :---: | :---: |
|  |  | \$ 0000,000 | \$'000,000 |  |
| 1930. |  |  |  |  |
| 1985. |  | 6,221 | 38 | 5.4 |
| 1940. |  | 8,776 | 200 | 2.9 |
| 1945. |  | 9.140 | ${ }^{612}$ | 8.7 |
| 1950. |  | 14,409 | 1,337 | 9.3 |
| 1958. |  | 25, 28.182 | $\stackrel{3,617}{ }$ | 10.0 14.3 |
| 1957. |  | 29,087 | 4.000 | 14.3 13.8 |
| 1958. |  | 33,087 | 3,409 | 10.3 |
| 1959. |  | 36,496 | 4,378 | 12.0 |
| 1960. |  | 40, 874 | 3,775 | 9.2 |
| 1961. |  | 44,649 | 3,635 | 8.1 |
| 1963. |  | 48,284 | 3,949 | 8.2 |
| 1964. |  | 52,233 | 4,571 | 8.8 |
| 1965. |  | 62,672 | 8,984 | 11.1 |

[^384]
## Subsection 1.-Summary of Life Insurance in Canada

Table 1 summarizes insurance premiums, claims, amounts of new policies effected and amounts of insurance in force on Dec. 31, 1965. These data are presented according to supervising government authorities for the companies and societies concerned, and according to nationality of company or society.
1.-Summary of Life Insurance in Canada according to Supervising Government Authority and by Nationalify of Company or Soclety, 1965

| Supervising Authority and Nationality of Company or Society | Insurance Premiums | Claims ${ }^{1}$ | New Policies Effected | Insurance in Force. Dec. 31 |
| :---: | :---: | :---: | :---: | :---: |
|  | \$'000 | \$000 | \$7000 | \$ 1000 |
| Supervising Authority |  |  |  |  |
| Federally Eegistered. | 981,471 | 374,238 | 9,128,2\%1 | 70, 818.856 |
| Companies. | 962, 148 | 368,148 | 8,967,408 | 69,655,958 |
| Societies.. | 19,323 | 6,090 | 160,863 | 962,798 |
| Provincially Licensed Only. | 72, 263 | 27,151 | 863,530 | 5,046,842 |
| Within Province of Incorporation- |  |  |  |  |
| Companies... | 55,264 4,178 | 18,753 2,907 | 680,151 92,489 | $3,911.735$ 389,676 |
| Outside Province of IncorporationCompanies. Societies. | 9,667 3,154 | 3,228 2,263 | 83,902 26.988 | 596, 157,880 |
| Totals. | 1,053,734 | 401,389 | 9,991,801 | 75,405,598 |
| Natlonality of Company or Society |  |  |  |  |
| Canadian Companies- |  |  |  |  |
|  | 640,358 64,931 | 252,524 21,981 | $5,868,616$ 744,053 | 47,900, 426 <br> 4,508,285 |
| Canadian Societies- |  |  |  |  |
| Federally registered . . . . . . . . . . . . . . . . . . . . . . . . . . . . Provincially licensed only......................... | 13.298 7.332 | $\mathbf{8 , 9 7 3}$ $\mathbf{5 , 1 7 0}$ | 128,415 119,477 | 705,263 538,557 |
| British Companjes- <br> Federally registered | 49,133 | 10,468 | 523,734 | 3,070,766 |
| Foreign Companies- <br> Federally registered | 272,857 | 105,150 | 2,575,068 | 18,684,767 |
| Foreign Societies- <br> Federally registered $\qquad$ | 6,025 | 2,117 | 32,448 | 257,535 |

${ }^{1}$ Death, disability and maturity under insurance contracts.

## Subsection 2.-Operational Statistics for Life Insurance Transacted in Canada by Companies under Federal Registration

The amount of life insurance in force in Canada has shown an almost continuous advance year by year since the beginning of the record in 1869. The amount per capita of the estimated population has more than doubled since 1955.

The operations analysed in the tables of this Subsection, with the exception of Table 6 , include only those of companies under federal registration and are exclusive of fraternal organizations and provincial licensees. However, companies under federal registration account for over 93 p.c. of the life insurance in force in Canada.

## 2.-Life Insurance Effected and in Force in Canada by Companies under Federal Registration, Decennially 1880-1950 and Annually 1955-65

Nort.-Figures for 1869-1900 are given in the 1938 Year Book, p. 958; for 1901-39 in the 1942 edition, p. 855 ; and for $1940-54$ in the 1957-58 edition, p. 1168. Statistics of fraternal society insurance, excluded here, are given at pp. 1551-1153.

| Year | New Insurance Effected during Year | Insurance in Force Dec. 31 |  |  |  | Insursnce in Force per Capita ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Canadian Companies | British Companies | Foreign Companies | Total |  |
|  | \$ | \% | \$ | \$ | \$ | \$ |
| 1880. | 13,906,887 | 37,838,518 | 19,789,863 | 33,643,745 | 91,272,126 | 21.45 |
| 1890. | 39,802,956 | 135,218,980 | 31,613,730 | 81,591,847 | 248,424,567 | 31.98 |
| 1900. | 67,729,115 | 267, 151,086 | 39,485,344 | 124,433,416 | 431,089,848 | 81.32 |
| 1910. | 150,785,805 | 565, 667,110 | 47,816.775 | 242,629,174 | 856,113,059 | 122.51 |
| 1920. | 830,110,900 | 1,664,348,605 | 76,883,090 | 915,793,798 | 2,657,025,493 | 310.55 |
| 1930. | 884,749,748 | 4,319,370,209 | 117,410,860 | 2,055,502,125 | 6,492,283, 194 | 636.00 |
| 1940 | 590,205,536 | 4, 609,213,977 | 145, 003,299 | 2,220,505,184 | 6,975, 322,460 | 612.89 |
| 1950. | 1,798,864,211 | 10,756,249,942 | 342,878,530 | 4,646,707,595 | 15,745,836,067 | 1,148.33 |
| 1955. | 3,154,670,863 | 17.401, 229,498 | 691,660, 141 | 7,358,681,886 | 25,451,571,525 | 1,621.33 |
| 1956. | 4,119,767,684 | 19.783, 194,985 | 819,968,279 | 8,484,252,879 | 29,087, 416, 143 | 1,808.88 |
| 1957. | 4,936,358,903 | 22,262,730,280 | 994,762,620 | 9,829,563,601 | 33,087,058,501 | 1,992.00 |
| 1958. | 8,129,714,126 | 24,580,264,322 | 1,170,343, 106 | 10,765, 171, 257 | 36, 495, 778,685 | 2,136.76 |
| 1859. | 5,622, 229,317 | 27,695,965,612 | 1,332,891, 403 | 11,844, 852,757 | 40, 873,809,772 | 2,337.92 |
| 1960. | 5,692,887,763 | 30, 118, 380,871 | 1,554, 844,168 | 12,675,749,459 | 44, $488,974,498$ | 2,498.54 |
| 1961. | 6,113,480,078 | 33,143, 378,921 | 1,778,255,673 | 13,362,848,638 | 48,284,483,232 | 2,647.47 |
| 1962. | 6,027,069,888 | 35, 907, 032, 820 | 2,040,700, 311 | 14,285,636,913 | 52,233,370, 044 | 2,812.78 |
| 1963 | 6,933, 120,080 | 39, 135,221, 497 | 2,328,769,718 | 15, $339,860,385$ | 56,803,851,600 | 3,006.13 |
| 1864 | 7,802,504,767 | 43,209,488,534 | 2,706,336,254 | 16,756, 485, 863 | 62,672,310,651 | 3,258.24 |
| 1965. | 8,967,408,329 | 47,900, 424,908 | 3,070,766,357 | 18,684,766,954 | 69,655, 958,219 | 3,558,14 |

${ }^{1}$ Based on official estimates of population.

## 3.-Summary of Life Insurance in Canada Transacted by Companies under Federal Registration, 1963-67

| Item | 1963 | 1984 | 1965 |
| :---: | :---: | :---: | :---: |
| Canadian Companies - |  |  |  |
| New policies effected during year, . . . . . . . . . . . . . . . . . . . No. | 387,786 | 411,960 | 408, 403 |
| Policies in torce Dee 31 . | 4.661,935,501 | 5,087,071,852 | 5,868,615,959 |
| Policies in force Dec. 31............................... No. | 5,300.787 | 5 $\begin{array}{r}\text { 5.400, } 676 \\ \hline\end{array}$ | 5.471.733 |
| Policies ceased by death or maturity.................. No. | 39,135, 2221.497 | $\begin{array}{r}43.209,488,534 \\ 57,488 \\ \hline\end{array}$ | 47,900، 424,908 |
| Polcies ceased by death or maturity .................... ${ }_{\text {, }}^{\text {No. }}$ | 208,787.303 | 217.321,442 | 243,837.741 |
| Insurance premiums...................................... \% | 566,875.249 | 602,049,648 | 640, 358,269 |
| Claims incurred'.......................................... \% | 220,924.829 | 224.797,465 | 252,523,784 |
| British Companles- |  |  |  |
| New policies effected during year.,.................... No. | 34,361 | 34.392 | 37,421 |
|  | 406,984,738 | 493, 267. 178 | 523,734, 283 |
| Polimes in torce Dec. 31................................ No. | 2,328,769,718 | 2,706, ${ }^{3086,152}$, 254 | 3,070,766,357 |
| Policies ceased by death or maturity.................. . No. | 2,32,394 | , 2,339 | 2.429 |
| Insurance premiums | 7,808,134 | 8,763, 908 | 10, 291,362 |
| Insurance premiums.................................... | 40,091,286 | 45,959,175 | 49,133,327 |
|  | 8,914,208 | 8,955,056 | 10,468,423 |
| Foretgn Companies- |  |  |  |
| New policies effected during year...................... No. | 269,090 | 263,553 | 239,997 |
| Policies in force Dee 31. | 1,864,199,841 | 2,242, 165,737 | 2,575,058,087 |
| Pobicies in force Dee. 31.................................. . ${ }_{\text {, }}$. | $4,653,937$ | 18.755.583, 808 | 18,684, 76.613 .610 |
| Policies ceased by death or maturity.................. No. | $15,339,860,385$ 65,590 | $18,756.485,863$ 86.540 | $18,684,766,954$ 69,701 |
| Insurance premiums | 84,410,910 | 91, 192, 722 | 101,030, 110 |
| Insurance premiums.................................... | 244,412,339 | 260,029, 173 | 272, 656,430 |
| Claioms incurred. | 87.087,771 | 95,522,880 | 105,158, 253 |

For footnote, gee end of table, p. 1148.

## 3.-Summary of Life Imsurance in Canada Transacted by Companies under Federal Reglstration, 1863-65-concluded

| Item | 1983 | 1964 | 1965 |
| :---: | :---: | :---: | :---: |
| All Companles- |  |  |  |
| New policies effected during year...................... No. | 691,237 | 709,905 | 685, 821 |
| Policies in force Dec. 31............................... No. | 6,833.120,080 | 7.802, 504,767 $10.292,836$ | 8,967.408,329 |
| Policies in iorce Dec. 31.................................. . No. | $\begin{array}{r} 10,249,732 \\ 56,803,851,600 \end{array}$ | $10,292,836$ $62,672,310,651$ | 10,308,804 |
| Policies ceased by desth or maturity................. No. | 56,803, 123,012 | 62,672, 1210,651 | 69,655.958, 219 |
| Insurance premivins | 298,984,347 | 317,278,072 | 355, 159,213 |
|  | $851,378.874$ $316.926,808$ | 908,037,996 | 962. 148.026 |
| Claims incurred.......................................... ; | 316,926,808 | 329,275,401 | 368,148,460 |

${ }^{1}$ Death, disability and maturity under insurance and annuity contracts for 1963; death, disability and maturity under insurance contracte for 1964 and 1965.

## 4.-Ordinary and Industrial Life Insurance Polfifes Efiected and in Force in Canada by Companies under Federal Registration, 1963-65

| Year, Type of Policy and Nationality of Company | New Policies Effected |  |  | Policies in Force Dec. 31 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | Amount | Average Amount per Policy | No. | Amotint | Average Amount per Policy |
|  |  | * | \$ |  | 8 | \% |
| 1963 |  |  |  |  |  |  |
| Ordinary Policies- |  |  |  |  |  |  |
| Canadian. | 384.803 34.199 | $3,128,717,327$ $364,112,229$ | 8.131 10.647 | $5,155,856$ 268,371 | $24,715,103,219$ $2,051,522.470$ | 4.794 7,644 |
| Foreign.... | 247,752 | 1,367, 535,580 | 5.521 | 2,720,131 | $8,812,138,127$ | 3,240 |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| British........ | 18, 140 | 10. $\overline{237,154}$ | 564 | 1,915,433 | 753,487,915 | 393 |
| 1954 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Canadian.......... | 408,595 | 3,518, 198,772 | 8,810 | $5.262+296$ 282,554 | $26,502,689,689$ $2,318,879,284$ | $\stackrel{8}{8,207}$ |
| British... | 34,265 245,806 | $404,705.850$ $1,491,667,115$ | 11.811 6.068 | 2,773, 2807 | $2,388,891,284$ $9,396,361,849$ | 3,388 |
| Industrial Policies- $\quad$ - $\quad$ - ${ }^{\text {a }}$ |  |  |  |  |  |  |
| Canadian...... | - | - | 二 | 115,323 |  | 120 |
| Britigh... | $\overline{14}, 016$ | 8,020,612 | 572 | 1,791,512 | 728,280,569 | 407 |
| 1965 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Canadian..... | 404,929 | 3,692.745,720 | 9,119 | 5,339، 45 L |  | 8,729 |
| British.. | 37,263 295,399 | $467.740,168$ 1.769 .815 .012 | 12.556 7.852 | $2,816,822$ 2,398 | 2,608,387,526 | 3,671 |
| Foreign......... | 225,399 | 1.769,815.012 | 7,852 | 2,816,398 | 10,338, 008,829 |  |
|  |  |  |  |  |  |  |
| Canadian........... | $\rightarrow$ |  | - | 107.529 23.823 | 29,834,069 | 119 |
| Foreign....................... | 10,618 | 8,151,513 | 579 | t.677,608 | 694,414,184 | 414 |

## 5.-Group Life Insurance Effected and In Force in Canada by Companies under

 Federal Registration, 1963-65| Year and <br> Nationality of Company | Effected |  | In Force Dec. 31 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Policies | Amount | Policies | Certificates | Amount | Average Amount per Certificate |
|  | No. | \$ | No. | No. | \$ | \$ |
| Canadian.................... | 2.983 | 1,533,218, 174 | 21.370 | 11,821,095 | 14,353,626,597 | 1.214 |
| British..................... | 162 | 42,872,509 | 658 | 56,510 | 274,079,857 | 4,850 |
| Foreign..................... | 3,238 | 486, 427,107 | 18,373 | 4,355,598 | 5,774,234,343 | 1,326 |
| Canadian.................... | 3,365 | 1,548,873,080 | 23,057 | 13,328,721 | 16,643,641,650 | 1,249 |
| British. | 127 | 88,511,328 | 717 | 65,238 | 384,470.517 | 5,893 |
| Forelgn..................... | 3,731 | 742,478,010 | 18.989 | 5,257.234 | 6,631,843.445 | 1,261 |
| 1945 |  |  |  |  |  |  |
| Canadian,.,................ | 3,474 | 2, 175, 870. 239 | 24,753 | 14,215,563 | 19,531, 297,663 | 1.374 |
| British....................... | 188 | 55,994, 120 | 816 | 339,855 | 459,544,762 | 1,352 |
| Forejga..................... | 3,980 | 799,091,562 | 19.604 | 5,392,12] | 7,651,743,941 | 1,419 |

6.-Insurance Death Rates in Canada, 1963-65

| Type oi Insurer | 1863 |  |  | 1964 |  |  | 1965 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Policies } \\ \text { Exposed } \\ \text { to } \\ \text { Risk } \end{gathered}$ | Policies Terminated by Death | Death Rate per 1,000 | $\begin{gathered} \text { Policies } \\ \text { Exposed } \\ \text { to } \\ \text { Risk } \end{gathered}$ | $\begin{gathered} \text { Policies } \\ \text { Ter } \\ \text { minated } \\ \text { by Death } \end{gathered}$ | Death Rate per | Policies <br> Exposed Risk | Policies Ter. minsted by Deati | Death Rate per 1,000 |
|  | No. | No. |  | No. | No. |  | No. | No. |  |
| All companies, ordinary..... | 8,090,829 | 45.882 | 5.7 | 8,259,604 | 46,082 | 5.6 | 8,410,880 | 48,932 | 5.8 |
| All companies, industrial... | 2,151,118 | 29,754 | 13.8 | 2,012,567 | 28.406 | 14.1 | 1,884, 620 | 28,564 | 15.2 |
| Fraternal benefit accieties. ....... | 490,374 | 4,251 | 8.7 | 496,308 | 4,361 | 8.8 | 500,272 | 4,231 | 8.5 |
| Totals. | 10,732,331 | 79,887 | 7.4 | 10,768,479 | 78,849 | 7.3 | 10,735,772 | 81,327 | 7.6 |

Subsection 3.-Finances of Companies Transacting Life Insurance under Federal Registration
The financial statistics in Tables 7 and 8 relate only to life insurance transacted by companies under federal registration. The figures for British and foreign companies apply to their assets, liabilities and operations in Canada only. On the other hand, the assets and liabilities, revenue and expenditure of Canadian companies are given for total business, including business arising outside of Canada as well as in Canada.

## 7.-Total Assets and Liabilities for Life Insurance of Canadian Companies under Federal Registration and Assets and Liabilities in Canada for Life Insurance of British and Foreign Companies under Federal Registration, 1963-65.

| Assets and Liabilities | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: |
|  | \$ | \$ | \$ |
| Canadian Companies |  |  |  |
| Total Assets ${ }^{1}$. | 10, 522, 735,490 | 11, 311, 660,952 | 12,096,778,697 |
| Bonds. | 4,647,180,012 | 4,873, 843, 798 | -4,995,956,689 |
| Stocks......... | -573,590.242 | -654,753,699 | 719,432,914 |
| Mortgage loans on real estate.... | $4,110,569,893$ $4,654,431$ | $4,518,559,633$ $6,081,314$ | 4,987, ${ }^{262}, 7510$ |
| Real estate.................... | 315,589,652 | 327,023,761 | $6,510,142$ $368,008,580$ |
| Policy loans | 496, 321,955 | 518,703,162 | $368,008,580$ $546,450,107$ |
| Cash. | 104,317,302 | 90,646,318 | 109,753,225 |
| Investment income, due and accrued..................... | 108,531,777 | 116,958,267 | 120,820,730 |
| Outstanding insurance premiums and annuity considerations. Shares of company's capital stock (purchased under mutuali- | 74,322,044 | 76,750,520 | 79,375,563 |
| zation plan)......................................... | 15,450,000 | 10,650,000 | 6,850,000 |
| Assets in segregated funds (at market values)................ | 24,861, 161 | $60,158,388$ | 94,283,633 |
| Other assets................................................. | 47,347,021 | 57,532,092 | 62,074,359 |
| Total Liabilities......................................... | 9,839,190,502 | 10,563, 780,067 | 11,276, 552, 736 |
| Outstanding claims under contracts... | $8,169,630,509$ $99,187,150$ | $8,712,667,941$ $103,896,900$ | $9,279,205,174$ $117,030,376$ |
| Amounts on deposit pertaining to contracts | 823,005,097 | 904,447,952 | 960,802,666 |
| Segregated funds | 24, 861, 161 | 60,158,388 | 94,283,633 |
| Other liabilities. | 722,506,585 | 782,608,886 | 825,230,887 |
| Surplus. | 666,533,584 | 729,996,726 | 800,590,482 |
| Capital stock paid up | 17,011,404 | 17,884,159 | 19,635,479 |
| British Companies |  |  |  |
| Assets in Canada ${ }^{\text {2 }}$ | 707,601,679 | 797,069,554 | 859,121,919 |
| Bonds | 373,526,632 | 392,759,401 | 386,116,676 |
| Stocks | 94, 153,880 | 118,097,902 | 125,309,122 |
| Mortgage loans | 190,607,375 | 231,675,737 | 283, 169,519 |
| Real estate. | 18,693,373 | 20,519,232 | 23,544,883 |
| Policy loans. | 12,809,738 | 13,873,562 | 15,454,409 |
|  | 1,430,067 | 2,257,172 | 1,578,373 |
| Investment income, due and accrued. | 2,830,979 | 3,207,108 | 3,458,755 |
| Outstanding insurance premiums and annuity considerations. . | 2,770,709 | 2,674,149 | 2,699, 208 |
| Assets in segregated funds | 515,669 | 727,733 | 3, 052,105 |
| Other assets.... | 10,263,257 | 11,277,558 | 14,738,869 |
| Labilities in Canada. | 638,317,037 | 718,564,885 | 795,438,914 |
| Actuarial reserve for contracts in for | 618,620,367 | 694,584,509 | 771, 209,384 |
| Outstanding claims under contracts. | 3,822,893 | 4,806,445 | 5,287,396 |
| Segregated funds. | 515,669 | 727,733 | 2, 427,209 |
| Other liabilities. | 15, 358, 108 | 18,446,198 | 16,514,925 |
| Excess of assets over liabilities in Canada | 69,284, 642 | 78, 504,669 | 63,683,005 |
| Foreign Companies |  |  |  |
| Assets in Canada ${ }^{2}$. | 1,912,181,644 | 1,963,269,188 | 2,037,898,281 |
| Bonds. | 1,237, 865,939 | 1,178, 234,994 | 1,174,236,864 |
| Stocks. | 2,055,300 | 2,264,500 | 2,950,300 |
| Mortgage loans on real esta | 531,673,132 | 624,823,361 | 698,196,664 |
| Real estate. | 6,455,398 | 20,058,414 | 18,957,589 |
| Policy loans | 84, 427,998 | 87,328,259 | 90,259,149 |
| Cash | 17,191,928 | 16,274,953 |  |
| Investment income, due and accrued...................... | 22,125,990 | $22,515,070$ $9,791,840$ | $23,647,943$ $10,442,969$ |
| Outstanding insurance premiums and annuity considerations. . Other assets. | $8,906,606$ $1,479,353$ | 9,791, <br> 1,947 | $10,442,969$ $2,166,404$ |
| Llabilities in Canada | 1,706,619,834 | 1,786,169,524 | 1,879,615,694 |
| Actuarial reserve for contracts in force | 1,555,014,242 | 1,619,055,795 | 1,693,024,707 |
| Outstanding claims under contracts. | 20,413, 617 | 22,900,164 | $26,993,406$ $159,597,581$ |
| Other liabilities. | 131,191,975 | 144,213,565 | 159,597,581 |
| Excess of assets over liabilities in Canada. | 205, 561,810 | 177,099,664 | 158,282,587 |

${ }^{1}$ At book values. The liabilities include a reserve equal to the amount, if any, by which the total book value of bonds, stocks and real estate exceeds the total market value (or amortized value where applicable), subject to the provisions of Subsect. (4) of Sect. 71 of the Canadian and British Insurance Companies Act. values.
8.-Total Revenue and Expenditure for LIfe Insurance Transacted by Canadian Companies under Federal Registration and Revenue and Expenditure in Canada for Life Insurance Transacted by British and Foreign Companies under Federal Registration, 1903-65.


Includea amounts written off ahares purohased under mutualization plan.
${ }^{2}$ Dividends on shares otber than those purebased by the company under mutualization plan.

## Subsection 4.-Life Insurance in Canada Transacted by Fraternal Benefit Societies

In addition to life insurance, some fraternal benefit societies grant other insurance benefits to members, notably sickness benefits, but these are relatively unimportant. Table 9 gives statistics of life insurance in Canada transacted by fraternal benefit societies and Table 10 shows statistics of assets, liabilities, income and expenditure relating to all business of Canadian societies and to the business in Canada of foreign societies. The rates charged by these societies are computed to be sufficient to provide the benefits granted, having regard for actuarial principles. The benefit funds of each society must be valued annually by a qualified actuary (Fellow, by examination, of the Institute of Actuaries of Great Britain, of the Faculty of Actuaries in Scotland, or of the Society of

Actuaries) and a readjustment of rates or benefits must be made, unless the actuary certifies to the solvency of each fund. The first sections of Tables 9 and 10 relate to the Canadian societies registered by the federal Department of Insurance; there were 14 such societies at the end of 1965.

Under an amendment to the Insurance Act, effective Jan. 1, 1920, all foreign fraternal benefit societies were required to obtain authority from the Federal Government prior to transacting business in Canada. However, any such societies which at that date were transacting business under provincial licences, although forbidden to accept new members, were permitted to continue all necessary transactions in respect of insurance already in force. Most of these societies and some foreign societies that had not been licensed previously by the provinces have since obtained federal authority to transact business. At the end of 1965 there were 35 foreign fraternal benefit societies federally registered to transact business in Canada, although two of these do not grant life insurance benefits.

## 9.-Summary of Life Insurance in Canada Transacted by Fraternal Benefit Societies under Federal Registration, 1868-85

| Item | 1983 | 1964 | 1965 |
| :---: | :---: | :---: | :---: |
| Canadian Societies |  |  |  |
| Premiums................................................. | 8,005,661 | 10,839,374 | 13,207,856 |
| Claims incurred............................................ | 5,034, 573 | 5,602, 186 | 6,005,474 |
| New certificates effected.................................... No. | 33,576 | 35,579 | 31,216 |
| Certifenteg in fore Dec. 31........ | 119,167,173 | 121,952, 835 | 128,415,057 |
| Certificates in torce Dec. $31 . \ldots . . . . . . . . . . . . . . . . . . . . . . . . . . ~ N o . ~$ | -315, 836 | 322,137 | 322,142 |
| Certificates ceased by death or maturity ............... No. | $613,059,254$ 3,213 | 658,838,155 | 705,262,425 3,717 |
| Certicates ceased by death or maturity................. | 3,158,037 | 3,408,982 | 3, 867,478 |
| Forelgn Societles |  |  |  |
| Premiums.............................................. | 5,434,266 | 6,224,760 | 8,024,955 |
| Clairs incurred...................................................................... | $2,869,636$ 11,403 | 3,007,317 | 3,251,190 |
| New certificates effected.................................. . . . . . | 28,250,934 | 29,920,587 | $\begin{array}{r} 14,951 \\ 32,447,660 \end{array}$ |
| Certificates in force Dec. 31............................... . . . | -148,785 | 150,882 | -153,779 |
| Certificates ceased by death or maturity ............ | 232,054, 34, | 245,087,050 | 257,535, 185 |
| Certificates ceased by death or maturity................ No. | 1,954,786 | $\begin{array}{r} 2,241 \\ 2,126,961 \end{array}$ | $2,034^{2}, 703$ |

10.-Financial Statistics for Fraternal Beneflt Societies under Federal Registration, 1863-65

| Item | 1983 | 1964 | 1985 |
| :---: | :---: | :---: | :---: |
| Camadian Socletles ${ }^{1}$ | \$ | 8 | \$ |
| Assets. | 213,233,586 | 237,302,293 | 261,075, 638 |
| Bonds. | 142,250.011 | 157,776,837 | 170.829,356 |
| Stocks. | 12,440,391 | 13,671,631 | 13,950,242 |
| Mortgage loans on real estate | 38,688,077 | 43,957,568 | 53,042,282 |
| Agreements of sale of real estate | 35,117 | 19, 19.151 | 4,375,467 |
| Real estate. | 3,822,715 | $88,937,063$ | 9,577, 773 |
| Cash.................. | $3,216,114$ | 2,474,153 | 2,000, 889 |
| Investment income, due and accrued. | 1,801,353 | 3,029,951 | 2,274,005 |
| Outstanding premiums, contributions and | 2,361.783 | $4,030,641$ 359,695 | $\begin{array}{r}4,154,907 \\ \hline 848,226\end{array}$ |
|  |  |  | 261,078, 632 |
| Liablibtles and Surplus. | 155,452,383 | $\begin{aligned} & 277,307,3 x \\ & 171,488,498 \end{aligned}$ | 189,112, 743 |
| Outstanding claims. | 1,913,027 | 2,380,707 | 2, 6077,084 |
| Amounts on deposit | 737,617 | 949,5688 | 1, 190.719 |
| Other.. | 32,110,480 | $36,372,983$ $26,180,537$ | 27,664, 004 |
| Surplus..... | 23,020,069 | 26,180,537 | 2,604,64 |
| Revenue. | 43,952,366 | 56,201,774 | 62,335, ${ }^{197}$ |
| Premiums, contributions and dues | 39,285,596 | 44,130,100 | 48,858,947 |
| Investment income........ | 9,803,584 | 11,140,913 | 12, 9889,407 |
| Other. | 903,185 | 930,757 |  |

${ }^{1}$ All funds, business in and out of Canade.
10.-Financial Statistics for Fraternal Benefit Societies under Federal Registration, 1963-65 -concluded

| Item | 1963 | 1964 | 1965 |
| :---: | :---: | :---: | :---: |
| Canadian Societles-concluded | 5 | 8 | \$ |
| Erpenditure. | 47,172,222 | 53,079,453 | 58,115,581 |
| Claims incurred. | 11,967,435 | 14,155,792 | 15,698, 119 |
| Increase in actuarial reserve | 14,607,794 | 16,183,974 | 17,743,957 |
| Tazes, licences and fees. | 113,634 | 151,596 | 755,010 |
| Commissions. | 7,133,026 | 7.854.755 | 7,923,360 |
| General expenses. | 8,404,755 | 9.070,597 | 9,915,848 |
| Other. | 1,213,365 | 1,372,384 | 1,497,241 |
| Dividends to membera | 2.976,584 | 3,619,031 | 8,931.950 |
| Increase in provision for dividends to members | 755,629 | 712,524 | 1,250,106 |
| Analysis of Increase in Surplus- |  |  |  |
| Excess of revenue over expenditure. | 2,820.144 | 3,131,117 | 4,218,406 |
| Net capital gain on invertments. | 87,248 | 36,733 | -284,821 |
| Other credits to surplus (net). | 85.535 | 281, 842 | 113,118 |
| Net increase in special reserves | -958,714 | -269,307 | -2.211, 892 |
| Increase in surplus. | 2,034,213 | 3,180,385 | 1,834,811 |
| Foreign Societies ${ }^{1}$ |  |  |  |
| Assets. | 55,482,457 | 59,016,178 | 61,746,744 |
| Bonds. | 47,871,417 | 50,310,740 | 52,493,353 |
| Stocks. | 464,750 | 577,785 | 744,055 |
| Mortgage loans on real estat | 1,350,869 | 2,121,033 | 2,109,674 |
| Real estate........ |  |  |  |
| Certificate lozns and liens. | 2,832,371 | 3,044, 439 | 3,213,760 |
|  | 2,062,798 | 2,023,143 | 2,209,887 |
| Investment income, doe and accrued | 682,984 | 736.138 | 776,205 |
| Outstanding premiums, contributions and dues | 210,261 | 108, 704 | $190+309$ |
|  | 7,007 | 4,197 | 501 |
| Ltablitites. | 46,254,544 | 48,365,891 | 50,652,836 |
| Actuarial reserve | 41,354,123 | 43,683, 668 | 45,783,893 |
| Outstanding claims | 508, 114 | 554,758 | 490,568 |
| Other. | 4,392,307 | 4,127,465 | 4,408,375 |
| Repenue. | 10,443,354 | 11,460,668 | 11,349,054 |
| Premiums, contributions and dues | 7,342,649 | 8,131,284 | 7,979,468 |
| Investmert income. | 2,393,765 | 2,778,840 | 2,798,603 |
| Other.. | 706,940 | 552,544 | 570, 983 |
| Erpenditure. | 5,828,623 | 6,617, 772 | 4, 1818,293 |
| Claitna incurred. | 3.791,696 | 8,845,952 | 4,103,095 |
| Tazes, licences and fees | 56,498 | 61.849 | 85,604 |
| Commibsiong. | 592, 104 | 553,551 | 572,346 |
| General expenses | 493,743 | 523.932 | 635,474 |
| Other......... | 297,437 | 965,606 | 517.870 |
| Dividends to thembers. | 597, 145 | 661, 582 | 733,804 |

${ }^{1}$ All funds, business in Canada only.

## Subsection 5.-Life Insurance Effected and in Force Outside Canada by Canadian Companies under Federal Registration

In this Subsection, there are given for the years 1964 and 1965 summary statistics of insurance effected and insurance in force at the end of the year in currencies other than Canadian dollars, as written by Canadian companies under federal registration. The data given are in terms of Canadian dollars, the conversions from the various foreign currencies having been made at the book rates of exchange used by the various companies.

Canadian life insurance companies operating under federal registration at Dec. 31, 1965 had life insurance in force amounting to $\$ 19,899,066,560$ in countries outside Canada. Insurance in force in currencies other than Canadian dollars amounted to $\$ 19,864,473,020$; the difference between these figures is presumably the net amount of business in countries outside Canada transacted in Canadian currency. The business in force in Canada of Canadian companies registered by the Federal Government amounted to $\$ 47,900,424,908$ at Dec. 31, 1965, and the total business on the books of these companies, in and out of

Canada, amounted to $\$ 67,799,491,468$. Thus, over 29 p.c. of the total business in force for Canadian companies registered by the Federal Government was in force in countries outside Canada, In connection with their business outside Canada, the Canadian Ife insurance companies registered by the Federal Government held, at the end of 1965, Commonwealth and foreign investments in the amount of $\$ 3,669,015,685$.

Approximately 71 p.c. of all business in force in currencies other than Canadian is in United States currency and 17 p.c. is in sterling. From a slightly different point of view, approximately 22 p.c. of this business in force is in currencies of Commonwealth countries other than Canada, and 78 p.c. in currencies of foreign countries.
11.-Life Insurance Effected and in Force for Canadian Companies (excluding Fraternal Socleties) under Federal Registration, in Currencies other than Canadlan Dollars, by Currency, 1964 and 1965.

| Currency | 1964 |  | 1965 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Insurance Effected | Insurance in Force | $\begin{aligned} & \text { Insurange } \\ & \text { Effected } \end{aligned}$ | Insurance in Force |
| Commonwealth Currencles. | $\frac{1}{64,588,434}$ | $\frac{1}{4,054,438,708}$ | $\$$ | $\begin{gathered} \$ \\ 4,401,711,769 \end{gathered}$ |
|  |  |  |  |  |
| Pounds- | $\begin{array}{r} 478.073,299 \\ 24,100 \end{array}$ | $\begin{array}{\|} 3,147,811,111 \\ 27,160 \end{array}$ | 501,510,680 | 3,399, 227,461 |
| Sterling............................... |  |  |  |  |
| Aritish West Indies, Bahamas, Bermuda |  |  |  |  |
| ard Jamaica............................ | $\begin{array}{r} 50,657,789 \\ 63,626,572 \\ 23,574 \end{array}$ | $\begin{aligned} & 238,132,904 \\ & 11,039,774 \\ & 157,142,521 \end{aligned}$ | $\begin{array}{r} 60,984,116 \\ 694,888 \end{array}$ | 292, 926, 807 |
| Cyprua... |  |  |  |  |
| Rambiaia |  |  |  | $118,200,355$ $20,034,925$ |
| Dollara- | $\underset{\substack{89,301,478 \\ 3,221 ; 824}}{ }$ | 471,032 | - |  |
| Britigh Honduras.................... |  |  |  | 464,045 |
| dad |  | 406, 109, 127 | 88,482,621 | 473,364,700 |
| Hong Kong............................... |  | 24,938,999 | 2,837,735 | 27,233,073 |
| Malaytia............................... |  | 25,009,981 |  | 23,131,292 |
| Rupees- |  |  |  |  |
| Ceylon. | 二 | $23,506,940$ 3 3 | = | 21, ${ }_{3}, 324,52828$ |
| Pakistan |  | - ${ }^{500,128}$ | - | - 430,909 |
| Shillinga- |  |  |  |  |
| East Africa | 1,007,298 | 15,963, 800 | 21,700 | 14,178,761 |
| Foreign Curreneles . . . . . . . . . . . . . . . . . | 2,105,393,904 | 13,055,728,792 | 2,527,556,280 | 15,459, 761, 251 |
| Babts (Thaitand) ${ }^{\text {Bolivars (Venezuela) }}$ | 8,588,914 | 52,399,919 | 7,551,561 | 60, 300, ${ }^{\text {, } 110}$ |
| Colones (El Salvador). |  | 775, 800 |  |  |
| Cordobas (Nicaragua), ................... |  | 12,699, ${ }^{1424,513}$ |  | 14,080, 2588,975 |
| Dollars (United States of America)........................... | 1,901,473,923 | 12,699,524,536 | 2,330,966,088 |  |
| Francs (Belgium) ............................. | - | 1,904 | - | ${ }^{658}$ |
|  |  |  | 89,500 | 288, 800 |
|  | 260,800 | 211,74 |  | 194,659 |
| Guilders (Netherlands Antilies)..............) | 4,095, 270 | 23,445, 746 | 3,228,509 | 24, 7021,2938 |
| Kyats (Burma)..... |  | 1,207, ${ }^{\text {c3, }}$ |  | 1,099,933 |
| Pesos (Colombia). |  | 1,2,920 |  |  |
| Pasos (Cuba) .......................... |  | 94, 967,351 | 5,025,057 | 44, 93938,046 |
|  | 17,135,17 | - ${ }_{2}^{16,698,728}$ |  | 2, 369,025 |
| Pesos (Philippines) | 16,033,240 | 92, 429,888 | 18,695, 150 | ${ }^{103,721,317}$ |
| Pounds (Egypt) ${ }^{\text {Poul }}$ |  | $8,426,217$ $116,599,646$ |  | 133,'531, 7172 |
| Pounds (Igrael) .......... | 20,321,267 | 43, 332,885 | 16, 212.1240 | -57, 5181,478 |
| Rand (South Arrica) | 114,269,601 | 812,731, 635 | 120,698,910 |  |
| Rupiahs (Indonesis)........................ |  | ${ }^{58,240}$ |  | 50,550 |
| Soles (Peru) |  | 3,255 |  | 3,281 |
| Totals. | 2,749,988,538 | 18,050, 107,500 | 3,188,488, 610 | 19,844,48,204 |

## Section 2.-Fire and Casualty Insurance

At the end of 1965 there were 261 companies registered by the Federal Government to transact fire insurance in Canada ( 84 Canadian, 67 British and 110 foreign). Of these companies, 254 ( 79 Canadian, 66 British and 109 foreign) were also registered to transact casualty insurance. In addition, 103 companies were registered by the Federal Government to transact casualty insurance but not fire insurance ( 28 Canadian, 7 British and 68 foreign). Of the companies registered to transact fire and/or casualty insurance, 81 were also registered to transact life insurance; 14 of these were registered for fire, life and casualty insurance and 67 for life and casualty but not fire insurance. It should be noted also that, in addition to the companies registered by the Federal Government to transact casualty insurance, there were 30 registered fraternal benefit societies transacting accident and sickness insurance, of which 28 also transacted life insurance.

The operations analysed in the tables of this Section, with the exception of Table 12, include only those companies under federal registration. As shown in Table 12, some fire and casualty insurance is transacted in Canada by companies that are provincially licensed only. These companies generally confine their operations to the province of incorporation and many of them are mutual organizations transacting only fire insurance on a county, municipal or parish basis. The table relates to insurance companies only; no data are included for fraternal benefit societies.

## 12.-Fire and Casualty Insurance Transacted in Canada, 1964 and 1965

| Item | 1964 |  | 1965 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { Net } \\ \text { Premiums } \\ \text { Written } \end{gathered}$ | Net <br> Claims <br> Incurred | $\begin{aligned} & \text { Net } \\ & \text { Premiums } \\ & \text { Written } \end{aligned}$ | $\begin{aligned} & \text { Net } \\ & \text { Claims } \\ & \text { Incurred } \end{aligned}$ |
|  | \$ | \$ | \$ | \$ |
| Fire Insurance |  |  |  |  |
| Federally registered companies ${ }^{1}$. | 221,697,952 | 120,340,684 | 243,198,156 | 121,578,097 |
| Provincial licensees. <br> In province by which incorporated | $35,044,358$ $31,794,472$ | $20,199,848$ $17,898,125$ | $36,950,198$ $\$ 8,459,878$ | $19,576,754$ $17,545,784$ |
| Outside province by which incorporated. ......... | 3,249,886 | 2,506,723 |  | 2,080,970 |
| Lloyds, London. | 8,795,046 | 5,096,046 | 10,695,425 | 7,863,415 |
| Totals, Fire ${ }^{1}$. | 265,537,356 | 145,636,578 | 290,843,779 | 149,018,266 |
| Casualty Insurance |  |  |  |  |
| Federally registered companies ${ }^{1}$. | 816,794,229 | 545,401,794 | 971, 679,475 | 608,240,341 |
| Provincial licensees. | 84,687,688 | 56,081,020 | 104,163,691 | 60,186,350 |
| In province by which incorporated................. | $74,056,138$ | 48,915,407 | 91,979,346 | 51,749,586 |
| Outside province by which incorporated.......... | 10,631,555 | 7,165,613 | 12,184,345 | 8,456,764 |
| Lloyds, London.. | 33,436,227 | 28,497,863 | 48,582,746 | 26,462,104 |
| Totals, Casualty ${ }^{1} \ldots \ldots \ldots \ldots \ldots \ldots \ldots .$. | 934,918,144 | 629,980,677 | 1,124,425,912 | 694,888,795 |
| Totals, Fire and Casualty ${ }^{1} \ldots \ldots \ldots \ldots \ldots . .$. | 1,200,455,500 | 775,617,255 | 1,415,269,691 | 843,907,061 |

[^385]
## Subsection 1.-Fire Insurance Transacted in Canada by Companies under Federal Registration

Net premiums written and net claims incurred during each year from 1956 to 1965 are given in Table 13 and the figures for 1965 are classified by province and nationality of company in Table 14.

## 13.-Fire Insurance Transacted in Canada by Companies under Federal Registration, 1956-65

(Leas all reinsurance for Canadian companies and registered or licensed reinsurance only for British and foreign companies)

| Year | Net Premiums Written during | Net Claims Incurred during Year | Year | Net Premiums Written during Year | Net Claims Incurted during Year |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ |  | * | \$ |
| $1956 .$. | 155,506,787 | 86,088,850 | 1961. | 200, 859,825 | 96,343,611 |
| 1957. | 156.246.117 | 109.757.161 | 1962...................... | 200,768,495 | 104,472,605 |
| 1958, | 177.364,450 | 88, 151, 887 | 1963. | 196,915,780 | 125,252, 467 |
| 1859...... | 196,702,991 | 96,054,754 | 1964. | 205, 276, 365 | 110,502,299 |
| 1980... | 200,735,958 | 100,501, 460 | 1965. | 224,358,438 | 111,570.118 |

14.-Fire Insurance in Canada classified by Provinee and by Nationality of Company under Federal Registration, 1065
(Registered or licensed reinsurance deducted)

| Province or Territory | Canadian Companies |  | British Companies |  | Foreign Companies |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Net Premiums Written | Net Claims Incurred | $\begin{aligned} & \text { Net } \\ & \text { Premiums } \\ & \text { Written } \end{aligned}$ | Net Claims Incurred | Net Premiums Written | Netaims Incurred Clat |
|  | \$ | \$ | \$ | \$ | \% | \$ |
| Newfoundland...................... | 1,055,301 | 401,056 | 1,304,858 | 575,188 | 1,346,224 | 268,721 |
| Prince Edward Island............... | 375.053 | 71,385 | 456,031 | 181,859 | 186.879 | 65,568 |
| Nova Scotis........................ | 3,406,072 | 1,189,679 | 8,154,724 | 1,227,455 | 1,217,401 | 667,515 |
| New Brunswick..................... | 2,605.514 | 1,184,007 | 2,582,863 | 1,277,069 | 2,335,006 | 786,687 |
| Quebeo. . . . . . . . . . . . . . . . . . . . . . . | 29,187.022 | 13,830,823 | 21,644,460 | 13,328,667 | 28,986,594 | 14,970,917 |
| Ontario. | 35, 186, 773 | 17.046,017 | 21,894,121 | 12,101.863 | 32,046.475 | 17,848,373 |
| Manitoba | 3,308,061 | 2,562,683 | 2,535,626 | 1,466,584 | 2,416,068 | 1,477,974 |
| Saakatchewan. | 3,654,057 | 1,793,822 | 1.275,348 | 576,047 | 1,905,304 | 958,330 |
| Alberta. | 6,026,029 | 3,096,761 | 3,701,708 | 1,762,388 | 3,370,868 | 2,052,317 |
| British Columbia. | 7,973,164 | 3,257,262 | 6,004,045 | 1.854,711 | 8,737,382 | 3,479,644 |
| Yukon and Northwest Territories... | 144,707 | 61,346 | 292,420 | 124.062 | 93,998 | 33,947 |
| Canada................ | 91,913,753 | 44,484,441 | 61,336,204 | 34,475,693 | 83,342,199 | 42,06\%,363 |

## Subsection 2.-Fire Losses

The information in Tables 15 to 17, which deals with the loss of property and life caused by fire, has been summarized from the annual report Fire Losses in Canada prepared by the Dominion Fire Commissioner, Department of Public Works. Federal losses not included in these figures in 1964 amounted to $\$ 2,866,472$ from 1,792 fires; average federal losses for the period 1955-64 amounted to $\$ 4,613,142$ from an annual average of 2,182 fires.
15.-Statistics of Mire Losses, 1855-64

Nors. $\rightarrow$ Figures for 1926-46 are given in the 1947 Year Book, p. 1078, and those for $1947-54$ in the 1960 edition, p. 1169. Figures from 1922 may be obtained from the Dominion Fire Commissioner, Department of Public Works.

| Year | Fires Reported | Property Loes ${ }^{1}$ | $\begin{gathered} \text { Loss } \\ \text { per } \\ \text { Capita } \end{gathered}$ | $\begin{gathered} \text { Deaths } \\ \text { by } \\ \text { Fire } \end{gathered}$ | Year | Fires Reported | Property Losel | $\begin{gathered} \text { Loss } \\ \text { per } \\ \text { Capita } \end{gathered}$ | $\begin{gathered} \text { Deaths } \\ \text { by } \\ \text { Fire } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | No. | \$ | \$ | No. |  | No. | \$ | * | No. |
| 1955. | 76,098 | 102,767,776 | 6.55 | 573 | 1960........ | 79.611 | 129,327, 288 | 7.24 | 568 |
| 1956. | 80,748 | 106,772, 153 | 6.64 | 601 | 1961. | 83.706 | 128,262,047 | 7.03 | 556 |
| 1957 | 82,088 | 133,492,277 | 8.04 | 638 | 1962........ | 85,585 | 140, 144,643 | 7.55 | 626 |
| 1958. | 88.919 | 120,258,696 | 7.04 | 532 | 1963. | 83.027 | 154,051,629 | 8.15 | 553 |
| 1959. | 84,241 | 134,532,238 | 7.12 | 580 | 1964 | 75.306 | 148,376,961 | 7.71 | 603 |

${ }^{1}$ Exeludes forest fires and Federal Government property losses.

The provincial property losses for 1961-64 given in Table 16 include both insured and uninsured losses.
16.-Fire Losses, by Province, 1961-44

| Province or Territory | 1961 | 1962 | 1963 | 1964 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Property Loss ${ }^{\text {l }}$ |  |  | Fires Reported | Property Loss ${ }^{1}$ | Loss per Capita |
|  | \$ | \$ | \% | No. | \$ | \$ |
| Newloundland. | 5. 535.260 | 1,026,077 | 3,368, 293 | 843 | 1,249,077 | 5.54 |
| Prince Edward Island. | 806, 429 | 901,550 | 859.773 | 364 | 490.172 | 4.58 |
| Nova Scotia. | 3,093,709 | 3,863,201 | 3.332,053 | 1,921 | 3,896,713 | 5.13 |
| New Brunswick | 3,667, 812 | 3,155,172 | 4.529.053 | 1,750 | 4,285.010 | 6.94 |
| Quebec. | 41,841,330 | 53,197,135 | 53,837,155 | 29.105 | 50,101,705 | 9.01 |
| Ontario. | 40,773,492 | 43,509,265 | 52,421,532 | 22,290 | 48,930,025 | 7.43 |
| Manitobs. | 4, 884,668 | 6,184,097 | 6,806,681 | 3,850 | 6,438,740 | 6.72 |
| Saskatchewan. | 4,741,201 | 2,790,614 | 4,701,317 | 2,196 | 5,329,669 | 5.65 |
| Alberta. | 8,674,795 | 10,756,397 | 9,813,646 | 6,136 | 11,560+866 | 8.07 |
| British Columbia. | 13,494,934 | 14,346,870 | 13,792,731 | 7,118 | 14,985,863 | 8.62 |
| Yukon and Northweat Territories... | 748,617 | 405,205 | 589,385 | 233 | 1,109,121 | 27.05 |
| Canada. | 128,262,047 | 140,144,643 | 154,051,629 | 75,30¢ | 148,376,961 | 7.71 |

[^386]17.-Fire Losses, by Type of Property and Cause of Fire, 1962-64

| Type of Property and Reported Cause of Fire | 1962 |  | 1983 |  | 1964 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Fires Reported | Property Loss | Fires Reported | Property Loss ${ }^{1}$ | Fires Reported | Properiy Lossel |
|  | No. | \% | No. | \$ | No. | + |
| Type of Property |  |  |  |  |  |  |
| Residential. | 62,353 | 39,414,601 | 50.040 | 39,413,018 | 53,396 | 39,674,160 |
| Mercantile. | 7.077 | 44,406,083 | 16,470 | 52.487,306 | 6.543 | 43,439,189 |
| Farm. | 6.413 | 14.331,437 | 6,088 | 14.366,579 | 5,418 | 14,779,996 |
| Manufacturing | 1,692 1,148 | $19,292,093$ $8,494.594$ | 2,042 | 18,871,320 | 1,870 | 24, 297,338 |
| Miscellaneous. | 1,148 6.902 | $8,494.594$ 14.205 .835 | 1,242 7,145 | $10,459,249$ $18,454,157$ | 1,245 6,834 | $12,129,277$ $14,057,001$ |
|  | 85,585 | 144, 144,643 | 83,027 | 154,451,689 | 75,305 | 148,876,561 |
| Reported Cause |  |  |  |  |  |  |
| Smokers' carelessness. Stoves, furnaces, boilers and smoke pipes. | 31,637 | 7,448,721 | 28,500 | 9,359,174 | 23,156 | 8,245,106 |
|  | 6,171 | 10,564,570 | 5,559 | 10,706,095 |  |  |
| Electrical wiring and appliances.... | 9,977 | 19,239,429 | 8.586 | 18,918,304 | ${ }_{9}^{4,007}$ | 19,486,867 |
| Matehes. <br> Defective and overbeated chimneys and flues | 2,174 | 3.301.857 | 2.322 | 4,021,216 | 2,015 | 2,030,027 |
|  | 2,502 | 2,929,994 | 2.240 | 2,790,044 | 1,911 | 2,133,072 |
| Hot ashes, cosls and open fires...... | 1.449 | 1,353,921 | 1,309 | 1.250,543 | 1,290 | 1. 531.309 |
| Petroleum and its products. | 1.544 | 3.502,520 | 1,833 | 4,277,143 | 1,690 | 5,437.823 |
| Lights, other than electric............ | 1,739 | 2,403.106 | 1,518 | 3.842.748 | 1,380 | 3,050,987 |
| Lightdidg............................ | 3,297 | 2,429,957 | 3,602 | 1,732,352 | 2,793 | 2,209,513 |
|  | 314 | 392,756 | 255 | 350.180 | 249 | 328,782 |
| Sparks on roofs ...................... | 448 | -922,316 | 527 | 1,026.679 | 537 | 1.000.988 |
| Spontaneous ignition . . . . . . . . . . . . . . . . | 371 | 1,699,714 | 393 | 3,156.934 | 401 | 2,461, 143 |
|  | 720 | 3,106,214 | 782 | 4,747,611 | 992 | 7,159,983 |
| Miscellaneous known causes (explo sions, freworts, friction, hot glease or metal, steam or hot water pipes, etc.) | 9.731 | 9.829,122 | 10.727 | 13,458,092 | 9,885 | 11,350,928 |
| Unknown............................. | 13,451 | 71, 100,386 | 16,074 | 74,414,819 | 15,247 | 73,148,719 |

I Excludes forest fires and Federal Government property losses.

## Subsection 3.-Casualty Insurance Transacted in Canada by Companies under Federal Registration

The various classes of casualty insurance are shown in Table 18. These figures relate only to companies registered by the Federal Government.

## 18.-Net Casualty Premiums Written, Premiums Earned and Claims Incurred in Canada, 1965

Nort.-Excluding marine insurance for which a certificate of registration is not required. Less all reinsuranct for Canadian companjes and registered or licensed reinsurance only for British and foreign companies.

| Class of Insurance | Premiums Written |  |  |  | Premiums Eamed | Clajms <br> Incurred |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Canadian Companies | British Companies | Foreign Companies | Total | All Companies | $\begin{gathered} \text { All } \\ \text { Companies } \end{gathered}$ |
|  | \$ | * | \$ | \$ | \$ | ; |
| Aircraft. | 445,246 | 3,232,448 | 2,041.404 | 5.719,098 | $5,816,696$ | $4,529.251$ |
| Automobile. | 240,780,361 | 101,353,850 | 145,160.305 | 487, 294,516 | $446,229,262$ | 300,038,707 |
| Boiler- | 4,032.315 | 1,311,336 | 2,005, 488 | 7,349,139 | 6,559.553 | 1.714, 016 |
| Machinery | 1,600,956 | 1,311,488 | 897, 181 | 2, 809,603 | $3.012,925$ | 2,493.598 |
| Credit...... | -278, 620 |  | 747.042 | 1,026,662 | 942,990 | ${ }^{283} .3012$ |
| Earthquake. | 32,265 | 28,432 | 83,469 | 144, 166 | 121,952 | 9,827 |
| Explosion. |  |  | 100,173 | 197, 213 | 165, 147 | 26,815 |

## 18.-Net Casualty Premiums Written, Premiums Earned and Claims Incurred In Canada, 1965-concluded

| Class of Insurance | Premiums Written |  |  |  | $\begin{gathered} \begin{array}{c} \text { Premiums } \\ \text { Earped } \end{array} \\ \text { All } \\ \text { Companies } \end{gathered}$ | Claims <br> Incurred <br> All <br> Companies |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Cansdian Companies | British Companies | Foreign Companies | Total |  |  |
|  | + | \$ | \$ | \$ | 1 | \$ |
| Guarantee- |  |  |  |  |  |  |
| Fidelity.. | 1,876,792 | 998.092 | 3,362,073 | 6,236,957 | 5, 522,373 | 2,220,752 |
| Surety........................ | 6,446.985 | 1,085,940 | 9,510,816 | 17,023,741 | 14.419.112 | 1,710,589 |
| Hail. ........................ | 255,258 $1,912,177$ | 1,065,515 | $5,048,723$ $4,400,756$ | $6,369,496$ $8,102,760$ | $8,386.059$ 7 7 | 2,076,238 |
| Inland transportation. .......... Jiability- | 1,912.177 | 1,789,827 | 4,400,756 | 8,102,760 | 7,931,030 | 4,513,115 |
| Public liability | 18,119.285 | 11,877,571 | 15,624,953 | 45;621,809 | 43.192,908 | 24,841,021 |
| Employers' liability | 2,955,376 | 2,838,893 | 1,965, 162 | 7,759.431 | 7, 458,398 | 3.279, 824 |
| Livestoric. | -21.762 | 206,773 | 112,332 | 297.343 | 408,445 | 134,747 |
| Mortsace. | 1, 339, 188 | - |  | 1,339,188 | 172+526 |  |
| Personsl accident and aiokness. | 135, 703,394 | 7.868. 854 | 137,414,319 | 280, 386, 267 | 276,618,097 | 212,376,610 |
| Personal property | 20.094.516 | 15,392,725 | 24,771.807 | 60,259,048 | 55, 330,817 | 30.431,670 |
| Plate glass. | 1,277,719 | 784,905 | 791,254 | 2,853, 878 | 2,858,836 | 1.716,188 |
| Real property. | 670,903 | 612,492 | 1,057,518 | 2,340,913 | 2,277,301 | 1,115,616 |
| Spriokler leakage |  |  | 19 | 184 | 414 |  |
| Theft... | 3,498,043 | 2,309,234 | 3.238,888 | 9,047,165 | 8.545.292 | 3,632,144 |
| Title. | - |  | 106,689 | 106,689 | 97, 417 | 750 |
| Water damage | - | - | 294 | 294 | 651 |  |
| Weather.. | 80,856 | -3 | $-2,852$ 10,221 | $-2,635$ 91,230 | -2, 64.819 | 69.595 |
|  |  |  |  |  |  |  |
| Totals. | 441,467,160 | 152, 458,777 | 358,448,333 | 252.374,270 | 894,158,500 | 597,185.017 |

## Subsection 4.-Finances of Companies Transacting Fire and Casualty Insurance under Federal Registration

The financial statistics of Tables 19 and 20 relate to fire and casualty insurance transacted by companies under federal registration. The figures for British and foreign companies apply to their assets, liabilities and operations in Canada only. On the other hand, the assets and liabilities, revenue and expenditure of Canadian companies are given for total business, including business arising out of Canada as well as in Canada.
19.-Total Assets and Liablitities for Fire and Casualty Insurance of Canadian Companies and Assets and Labilities in Canada for Fire and Casualty Insurance of British and Foreign Companies under Federal Rezistration, 1983-65.


For footnotes, see end of table, p. 1160.
19.-Total Assets and Labilities for Fire and Casualty Insurance of Canadian Companies and Assets and Liabilities in Canada for Fire and Casualty Insurance of Brithsh and Forelgn Companies under Federal Registration, 1963-65-coneluded.


1 Business in and out of Canada. ${ }^{2}$ At book values. The smount, it any, by which the total book value of bonds, stocks and real estate exceeds the total market value is shown separately as a deduction to assets, * Business in Canade oniy. 'At market values.
20.- Underwriting Account and Analysis of Surplus of Canadian Companies and Uaderwriting Account and Investment Income in Canada of British and Forelgn Companites Transacting Fire and Casualty Insurance under Federal Registration, 1964 and 1965.

| Item | 1984 | 1965 |
| :---: | :---: | :---: |
| Canadian Companies <br> (In snd Out of Canada) | \$ | \% |
| Underwriting Account- <br> Underwriting income earned | 478,282,668 | 587,078, 185 |
| Less disbursements: | 330,744,557 | 372,623,948 |
| Commissions and genersl expense | 157,868,046 | 180, 868, 109 |
| Premium taxes, licences and fees. | 11, 511,150 | 13,784,111 |
| Dividends to policyholdera.... | 4,905,477 | 4,154, 423 |
| Underwriting gain or loss (-).. | -26,706,562 | $-4,317,406$ |
| Amalysis of Increase in Surplus- |  |  |
| Underwriting gain or loss (-).. | -28,706,562 | -4,317,403 |
| Investment income. . . . . . . . . . | 27, 51321.858 | -1,178, 450 |
| Other investraent account items | - $\begin{array}{r}\text { 5,321,',48 } \\ -1,859,443\end{array}$ | -5,273,413 |
| Income taxes............. | -3, ${ }^{-1} 107.122$ | -4,757,993 |
| Dividends to shareholders | -1,044, 811 | $-1,801,400$ $7,472,155$ |
| Preminm on capital stock or surplus paid in | 11,849,177 | 7,472,153 |
| Increase in surplus. | 11,811,167 | 22,718,729 |

20.- Underwriting Account and Analysis of Surplus of Canadian Companies and Under-
Writing Account and Investment Income in Canada of British and Forefgn Companies
Transacting Fire and Casualty Insurance under Federal Registration, $196 \pm$ and 1985 -
concluded.

| Item | 1964 | 1965 |
| :---: | :---: | :---: |
|  | \$ | \$ |
| British Companies |  |  |
| Underwriting Account in Canada- |  |  |
| Underwriting income earned. | 198,047,928 | 214,202,897 |
| Less disbursements: |  |  |
| Claims incurred.... | 124,428,836 | 126,098, 049 |
| Commissions and general expenses | $82,490,780$ $4,784,820$ | $85,113,232$ $5,157,579$ |
| Pividends to policybolders... | 4, 1,800 |  |
| Underwriting gain or loss ( - ). | -15,658,308 | -2.165,963 |
| Income taxes.... | 64, 605 | 30,087 |
| Investment income. | 10.843,710 | 11,747,706 |
| Foreign Companies |  |  |
| Underwriting Account in Canada- |  |  |
| Underwriting income earned. . | 363,692.723 | 412,644,927 |
| Less disbursements: |  |  |
| Claims incurred. | 241,573,050 | 266,600.689 |
| Commissions and general expenses. | 119.436, 460 | 129, 107, 737 |
| Premium tares, licences and lees. | 8, 822,383 | 10,031,897 |
| Dividende to policyholders. | 6.806,665 | 4, 153,930 |
| Underwriting gain or loss ( - ) | -12,945,835 | 2.750 .674 |
| Income tares........ | 1,250,689 | 2.752,162 |
| Investment income. | 20,161,637 | 22,046,087 |

## Section 3.-Government Insurance

## Federal Government Insurance

For more than fifty years the Federal Government has operated an annuity service, instituted to assist Canadians to make provision for old age; this service is described below, In addition, various insurance schemes have been adopted in recent years by the Federal Government or co-operatively by the federal and provincial governments. Information on wemployment insurance, health insurance, veterans insurance, export credits insurance, etc., will be found in the appropriate Chapters on Labour, Health and Welfare, Foreign Trade, etc.

Government Annuities.*-The Government Annuities Act (RSC 1952, c. 132) was passed in 1908 and is administered by the Minister of Labour.

A Canadian Government annuity is a fixed yearly income purchased from and paid by the Government of Canada. The annuity is payable in monthly instalments for life, or for life and guaranteed for a period of years. The minimum annuity is $\$ 10$ and the maximum $\$ 1,200$ a year or the actuarial equivalent if the annuity is to reduce by the amount of payments under the Old Age Security Act. Annuity contracts may be deferred or immediate. Deferred annuities are purchased by periodic or single premiums. Immediate annuity contracts provide immediate income. Annuities may be arranged to reduce by $\$ 75$ a month when payments under the Old Age Security Act begin.

The property and interest of the annuitant are neither transferable nor attachable. In the event of the death of the annuitant before a deferred annuity vests, all money paid is refunded with interest. Provision is made in the Act for group annuity contracts whereby employers may contract for the purchase of annuities on behalf of their employees, or associations on behalf of their members, the purchase money being derived partly from Wages and partly from employer contributions or entirely from employer contributions.

[^387]Annuities arising from individual contracts may be taxable in either of two ways: (1) if registered under Sect. 79B of the Income Tax Act for tax exemption on premiums, the annuity is fully taxable, or (2) if not registered, the annuity is taxable on the interest portion only. Annuities arising from registered pension plans are fully taxable but the employee and the employer are entitled to tax exemption year by year on their annual contributions to the pension plan.

From Sept. 1, 1908, the date of the inception of the system, to Mar. 31, 1966, the total number of annuity contracts and certificates issued, excluding replacements, was 542,163. On the latter date, 96,350 annuities were being paid amounting to $\$ 55,640,684$ annually and 288,752 deferred annuities were being purchased. The net total amount of purchase money received up to Mar. 31, 1966 was $\$ 1,436,051,060$. At that date there were in force 1,267 pension plans underwritten by government annuities, providing 200,498 employees with portable pensions; approximately 30,000 retired employees were receiving pensions. The number of certificates issued during the year was 1,979 compared with 1,783 in 1964-65.

## 21.-Individual Annuity Contracts and Certificates Issued and Net Receipts, Years Ended Mar. 31, 1962-66, with Cumulative Totals

| Year Ended Mar. 31- | Individual Contracts Issued | $\begin{aligned} & \text { Group } \\ & \text { Certificates } \\ & \text { Issued } \end{aligned}$ | Total Contracts and Certificates Issued | Net Receipts |
| :---: | :---: | :---: | :---: | :---: |
|  | No. | No. | No. | \$ 000 |
| 1909-61. | 196, 184 | 309,520 | 505, 704 | 1,270,359 |
| 1962. | 4,117 | 7,480 | 11,597 | 43,097 |
| 1963. | 4,296 | 3,687 | 7,983 | 37,003 |
| 1984. | 3,687 | 2.470 | 6,157 | 28,894 |
| 1965. | 3,817 | 1,783 1.979 | 5,800 | 29,583 27,114 |
| 1966. | 3,143 | 1.979 | 8, 122 | 27,114 |
| Totals, 1909-66. | 215,244 | 376,918 | 542,163 | 1,436,051 |

22.-Government Annuity Account Statements, Years Ended Mar. 31, 1962-66

| Item | 1962 | 1963 | 1964 | 1965 | 1906 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \$ | \$ | * | \$ | 8 |
| Assets |  |  |  |  |  |
| Fund at beginnipg of fiscal year.................. | 1,189,122,929 | 1,235,303,906 | 1,264,436,143, | 1,284,261,927 | $1,305,136,883$ $13,943,136$ |
| Receipts during the year, less payments........... | 36,180,977 | 29,132, 237 | 19,825,784 | 18,874,956 | 13,943,135 |
| Fund at end of fiscal year. | 1,235,303,906 | 1,264,436,143 | 1,284,261,827 | 1,303,136,883 | 1,317,080,018 |
| Liabilities |  |  |  |  |  |
| Value of outstanding contracts................... | 1,235,303,906 | 1,264,436,143 | 1,284,261,927 | 1,303,136,883 | 1,317,080,018 |
| Beceipts |  |  |  |  |  |
| Immediate ampuities. | 2,465,933 | 1.468,984 | 1,054,824 | 4,531,333 | 4,471,973 $23,146,947$ |
| Deferred annuities. | 41,007, 852 | $36,068,164$ 47,414 403 | 28,358, 312 |  | 50,048,246 |
| Interest on fund. . | 46,010,743 | 47,414,303 | 48,376,632 | $\xrightarrow{49,180,086}$ | 30,048,240 |
| Totak, Receipts. | 85,484,528 | 84,946,451 | 77,784,768 | 79,342,598 | 77,667,165 |

22.-Government Annuity Account Statements, Years Ended Mar. 31, 1962-66-concluded

| Itern | 1962 | 1963 | 1964 | 1965 | 1966 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | \% | $\$$ | ¢ | \$ | \$ |
| Payments |  |  |  |  |  |
| Payments under vested annuity contracts. | 46,927,513 | 48, 854, 768 | 50,556,551 | 52,870,629 | 55,183,304 |
| Return of premiums with interest. .............. | 5,189,647 | 5,538,438 | 5,626,064 | 5,982,052 | 6.120,656 |
| Return of premiums without interest............ | 872,639 | 961,182 | 875,581 | 876,543 | 826,265 |
| Unclaimed annuities transierred to Consolidated Reverue Fumd, net | 21,179 | 42,581 | 27,345 | 42,979 | 92,122 |
| Surptus transierred to Consolidated Revenue Fund. | 292,573 | 417,300 | 878,443 | 695,379 | 1,501,684 |
| Totals, Payments................... | 53,805,551 | 55,814,214 | 57,963,284 | *0,467,582 | 63,744,031 |

23.-Numbers and Values of Annuity Contracts, as at Mar. 31, 1965 and 1966

| Classification | 1965 |  |  | 1966 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Contracts | $\begin{aligned} & \text { Amount } \\ & \text { of } \\ & \text { Annuities } \end{aligned}$ | Value at <br> Mar. 31 of Contracts in Force | Contracts | Amount of Annuities | Value at <br> Mar. 31 of Contracts in Force |
|  | No. | \$ | \$ | No. | \$ | 8 |
| Vested ordinary . . . . . . . . . | 45,884 | 21,031,124 | 166, 120, 071 | 47,330 | 2t, 888, 688 | 171,184,200 |
| Vested guaranteed.......... | 35,648 | 20,494, 807 | 218, 099,866 | 36,838 | 21,279,204 | 224,815,427 |
|  | 3,497 | 1,880,943 | 22,109, 191 | 3,407 | 1,843,030 | 21,567,391 |
| Security age .............. Deferred. ............. | 8,313 295,672 | 9, 781,761 | $\begin{array}{r} 63,184,829 \\ 833 \end{array}$ | 8,775 288,752 | 10,629,762 | $\begin{array}{r} 64,759,573 \\ 834,753,427 \end{array}$ |
| Totals.. | 389,414 | 53,188, 6 \% | 1,308,136,888 | 385,102 | 55,440,684 | 1,317,084,018 |

## Undetermined.

## Provincial Government Insurance

Saskatchewan.-The Saskatchewan Government Insurance Office, a Crown corporation established by the Saskatchewan Government Insurance Act, 1944, commenced business in May 1945. It deals in all types of insurance other than sickness and life. The aim of the legislation is to provide residents of the province with low-cost insurance designed for their particular needs. Rates are based on loss experience in Saskatchewan only and the surplus is invested, to the extent possible, within the province. Premium income for 1965 amounted to $\$ 10,938,740$ and earned surplus to $\$ 556,767$. The total amount made available to the Government of Saskatchewan from 1945 to Dec. 31 , 1965 was $\$ 5,542,769$. Assets at the latter date were $\$ 22,593,871$, of which $\$ 13,700,000$ were invested in bonds and debentures issued by Saskatchewan schools, municipalities, hospitals and the province. Independent insurance agents numbering 606 sell government insurance throughout the province.

The Automobile Accident Insurance Act, which became effective Apr. 1, 1946, is administered by the Saskatchewan Government Insurance Office. It establishes a compulsory automatic insurance plan designed to provide a reasonable minimum of compensation for losses arising from motor vehicle accidents regardless of fault. It also provides public liability insurance, with an inclusive limit of $\$ 35,000$ for bodily injury and property damage, as well as comprehensive and collision coverage subject to a $\$ 200$ deductible for private passenger cars. Rates vary from $\$ 4$ a year for older farm trucks to $\$ 67$ for latemodel private passenger cars, and also vary for other types of motor vehicles depending on gize and usage. From the inception of the Act in 1946 to Dec. 31, 1965 more than $\$ 94,000,000$ was paid in claims.

The Saskatchewan Government Insurance Office, under contract with the Saskatchewan Department of Natural Resources, offers insurance to farmers covering damage to unharvested crops by certain wildlife such as ducks, geese, sandhill cranes, deer, elk, bear and antelope.

Information regarding the operation of the Saskatchewan Government Insurance Office or the Automobile Accident Insurance Act may be obtained from the Office Librarian, Saskatchewan Government Insurance Office, Regina, Sask.

Alberta.-Provincial government insurance in Alberta, coming within the purview of the Alberta Insurance Act, relates (1) to the Alberta General Insurance Company, in which the entire business of the fire branch of the Alberta Government Insurance Office was vested by the Legislature on Mar. 31, 1948, and (2) to the Life Insurance Company of Alberta, which was constituted on the same date to take over the life branch of the Alberta Government Insurance Office. Each company is administered by a separate board of directors. The Lieutenant-Governor in Council appoints the members to the respective boards but the charter of the Life Insurance Company of Alberta provides for the election of two policyholder directors. Although both companies are Crown corporations, they are not entitled to the usual immunities of the Crown, since they may sue and be sued in any court of competent jurisdiction.

A variety of agencies in Alberta offer forms of prepaid protection corresponding to insurance but the nature of the enabling legislation governing these plans emphasizes the fact that they do not constitute insurance. Because such exemptions are specifically provided by the insurance laws of the province, reference to these plans is necessary only to make it clear that they do not come within the scope of the Alberta Insurance Act. It should be noted that the Alberta Hail Insurance Act is administered by the Provincial Treasurer but none of the provisions of the Alberta Insurance Act apply to the Alberta Hail Insurance Board.

Further information on provincial insurance matters may be obtained from the Superintendent of Insurance, Department of the Provincial Secretary, Edmonton, Alta.

## Section 4.-Pension Plans

Very few pension plans in Canada have been in existence for more than 25 years and most of the older plans were installed by governments and financial institutions, such as banks. Employers in industry began showing an interest in pension plans for their employees shortly before World War II and from that time on there was a rapid incresse in the rate at which plans were introduced.

Up to 1948 the majority of employers made arrangements with either the Annuities Branch of the Department of Labour (see pp. 1161-1163) or an insurance company for the underwriting of their plans. Then began the use of the facilities of corporate trustees (trust companies) to handle pension moneys, and by 1953 the amount of funds under control of such trusteed plans had become a significant factor in the capital market and a growing form of savings. Trusteed pension funds are also managed by individual trustees appointed by the employer or through a Pension Fund Society, which is a body incorporated under federal or provincial pension fund societies Acts, companies Acts, etc.

Table 24 shows the distribution of pension business for the years 1961-65.
24.-Distribution of Pension Business between Trusteed Funds, Life Insurance Company
Annuities and Government Annuitles, 1961-65


Pension trust funds derive their income from employer and employee contributions, investment income and profit on the sale of securities. Expenditures arise from pension payments, pensions purchased from an underwriter on retirement or separation, cash withdrawals on death or separation, administrative costs and losses on the sale of securities. The funds are invested in federal, provincial, municipal and corporate bonds, stocks, mortgages, real estate and lease-backs. In recent years corporate trustees have introduced the "pooled" or "classified" type of fund, which enablea small plans to have their assets combined so that each fund participates in the diversity, security and yield previously available only to the much larger single funds. The trustees of a fund, whether corporate or individuals, may also purchase mutual funds.

Table 25 shows the various types of trusteed funds and the income, expenditures and assets of the funds in 1962-65.
25.-Trusteed Pension Plans, Income, Expenditures and Assets, 1962-65

| Itean |  | 1962 | 1963 | 1964 | 1985 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Trosteed plans. | No. | 1,547 | 1,805 | 2.119 | 2,998 |
| (a) Corporate trustees. | " | 1,256 | 1,487 | 1.798 | ,306 |
| (b) Individual trustees. | " | 230 | \% 251 | 381 | 626 |
| Pension Combinations of (a) and (b) and | " | ${ }^{23}$ | 49 | 99 | 32 |
| Pooled funds. . . | " | 888 | 1. ${ }^{38}$ |  | - ${ }^{34}$ |
| Motual funds.: | " | ${ }_{38} 8$ | 1. $11{ }_{58}$ | +,318 | ${ }_{1}^{1,846}$ |
| Cootributory funds. | " | 1,144 | 1.340 | 1,594 | 2,087 |
| Non-retired employees covered | '000 | + 403 | 1.255 | 1525 | ${ }_{1} 917$ |
| - | 0 | +131 | 1,207 | 1,337 | 1,472 |

## 25.-Trusteed Pension Plans, Income, Expenditures and Assets, 1562-65-concluded

| Item | 1962 | 1863 | 1064 | 1965 |
| :---: | :---: | :---: | :---: | :---: |
| Income- |  |  |  |  |
| Tokal contributions.................. . . . . . . . . . . . . . . . . . . . . . . ${ }^{\mathbf{\prime}} 0000000$ | 472 | 541 | 597 | 678 |
|  | 971 | 917 | 348 | 407 |
|  | 206 | 8884 | 249 273 | 370 |
| Net profit on sale of securities.................................... | ${ }^{206}$ | ${ }_{9} 9$ | 273 | 309 II |
| Other,.............................................................. . . . | 3 | 5 | 3 |  |
| Totaks, Income . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . \$8004,000 | 087 | 792 | 882 | 1,405 |
| Expenditures- |  |  |  |  |
| Pension payments out of funds. . . . . . . . . . . . . . . . . . . . . . . . . . . . . $\mathbf{s}^{* 000,000}$ | 135 | 15! | 170 |  |
| Cost of pensions purchased. . . . . . . . . . . . . . . . . . . . . . . . . . . . ... " | 6 | 4 | 8 | 8 |
| Cash withdrawals. ................................................. ${ }_{\text {a }}$ | 42 | 47 | 54 | 85 |
| Administration costs..... ..................................... ${ }_{\text {a }}$ | 2 | 3 | 4 | 5 |
| Net loss on sale of securities....................................... " | 6 | 3 | 4 | 2 |
| Other expenditures. . | 2 | 8 | 8 |  |
| Totals, Expenditures . . . . . . . . . . . . . . . . . . . . . . . . . . . . . \$800,040 | 153 | 211 | 248 | 34 |
| Assets (beolt value)- |  |  |  |  |
| Investment in proled tunds...................................... . st000,000 | 173 | 239 | 324 | 428 |
| Investment in mutual fumds......................................... . | 44 | 49 | 58 | 32 |
| Bonds. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . $\$ 0.000 .000$ | 3,292 | 3.618 | 3,908 | 4,230 |
| Bonds of, or guaranteed by, Government of Canads......... " | $\cdot 609$ | . 688 | . 551 | ${ }^{515}$ |
| Bonds of, or guaranteed by, provincial governments.......... | 1,482 | 1,674 | 1,868 | 2,08! |
| Bonds of Canadian municipsl governments, school boards, ete. | 467 | 546 | 888 | 656 |
| Other Canadian.................................................. | 751 | 815 | 885 | 1,088 |
|  | $s$ | $s$ | 3 | 5 |
| Stockr. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . $\mathbf{\$}^{\prime} 0000000$ | 499 | 814 | 779 | 994 |
| Canadian, common............................................) " | 404 | 499 | 697 | 796 |
| Camadian, preierred............................................ « | 18 | 20 | 19 | ${ }^{28}$ |
| Non-Caradian, common......................................... . . | 77 | 85 | 155 | 168 |
| Mortgages . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . $\$$ \$000,000 | 417 | 482 | 545 | 626 |
| Insured residential (NHA).................................. | 878 | 324 | 355 | 587 |
| Other................. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . | 159 | 158 | 198 | 259 |
|  | 34 | 40 | 42 | 44 |
| Accrued interest. ................................................... | 42 | 45 | 50 | 56 |
| Accounta receivable............................................ * | 24 | 27 | 81 | ${ }^{32}$ |
|  | 47 1 | $\sim_{-}^{61}$ | 79 | 156 |
|  | 4,573 | 5,17\% | 5,824 | 6,004 |

## GHAPTER XXVI.-DEFENCE

## CONSPECTUS

| Pagit |  |  |  | Phge |
| :---: | :---: | :---: | :---: | :---: |
| Part I.-The Armed Services and Defence Research | 1167 | Section 4. Services Colleges Tbatnting Collegeb. ....... | ind StafF | 1178 |
| Segtion 1. The Department of National. Defencem. | 1167 | Section 5. The Depence Rraea | cich Boafd | 1180 |
| Section 2. The Command Structure of the Canadian Forcer.......... ... | 1172 | Part II,-Defence Production. |  | 1181 |
| Section 3. Operations and Training of the Canadlan Fohcea.......... .... | 1173 | Part $\begin{gathered}\text { III.-Civil Emergency } \\ \text { (Civil Defence) }\end{gathered}$ | Planning | 1183 |

The interpretation of the symbols used in the tables throughout the Year Book will be found on $p$. viti of this nolume.

## PART I.-THE ARMED SERVICES AND DEFENCE RESEARCH*

## Section 1.-The Department of National Defence

The control and management of all matters relating to national defence, the Canadian Forces and the Defence Research Board are the responsibility of the Minister and Associate Minister of National Defence; the duties and functions relating to national survival have also been assigned to the Department of National Defence with the Canadian Army undertaking the major role.

Effective Aug. 1, 1964, the Headquarters of the Royal Canadian Navy, the Canadian Army and the Royal Canadian Air Force were integrated to form a single Canadian Forces Headquarters (CFHQ) under a single Chief of Defence Staff. The role of CFHQ is to provide military advice to the Minister of National Defence and to control and administer the Canadian Forces.

CFHQ is organized in four functional Branches headed by the Vice-Chief of Defence Staff, the Chief of Personnel, the Chief of Technical Services and the Comptroller General, who are responsible for advising and supporting the Chief of Defence Staff in matters relating to their assigned spheres of activity. The Defence Research Board conducts research relating to the defence of Canada and also undertakes the development of or improvements in materiel.

The civilian administration of the Department is organized under the Deputy Minister and is constituted on a functional basis. The Deputy Minister, assisted by an Associate Deputy Minister, maintains a continuing review and control over the financial aspects of operational policy, logistics, and personnel and administration. Three Assistant Deputy

[^388]Ministers each administers a division of the Deputy Minister's Branch responsible for personnel, logistics and finance. Also responsible to the Deputy Minister are the Judge Advocate General, the Departmental Secretary and the Director of Information Services.

The Defence Council meets at regular intervals to consider and advise on major policy matters. The Council consists of: the Minister of National Defence as Chairman; the Associate Minister of National Defence as Vice-Chairman; and the Parliamentary Assistant to the Minister of National Defence, the Deputy Minister of National Defence, the Chief of Defence Staff, the Chairman of the Defence Research Board, the Vice-Chief of Defence Staff as members and a Secretary.

Liaison in Other Countries.-The Chief of Defence Staff, who is the Canadian military respresentative to the North Atlantic Treaty Organization, is responsible for advice on all NATO military matters and acts as a military adviser to Canadian NATO delegations. For purposes of liaison and the furtherance of international co-operation in defence, Canada also maintains: (1) the Canadian Defence Liaison Staff London, representing the Canadian Armed Forces and the Defence Research Board in Britain, the Chairman of which is the principal military adviser to the Canadian High Commissioner in London; (2) the Canadian Defence Liaison Staff Washington, representing the Canadian Armed Forces and the Defence Research Board in the United States, the Chairman of which is the principal military adviser to the Canadian Ambassador in Washington, the Canadian National Liaison Representative to SACLANT Headquarters, and the Canadian member of the NATO Military Committee in Permanent Session; (3) in Paris, a Military Adviser to the Canadian Permanent Representative to the North Atlantic Council and also a Canadian National Military Representative to SHAPE; and (4) Service Attachés in various countries throughout the world. In addition, a number of defence matters of concern to both Canada and the United States are considered by the Permanent Joint Board on Defence, which provides advice on such matters to the respective governments.

Canada-United States Committee on Joint Defence.-This Committee is composed of: for Canada, the Secretary of State for External Affairs, the Minister of National Defence and the Minister of Finance; for the United States, the Secretary of State, the Secretary of Defense and the Secretary of the Treasury; together with such other Cabinet members as either government may designate from time to time. Its function is to consult periodically on any matters affecting the joint defence of Canada and the United States; to exchange information and views at the ministerial level on problems that may arise, with a view to strengthening further the close co-operation between the two goveruments on joint defence matters; and to report on such discussions in order that consideration may be given to measures deemed appropriate and necessary to improve defence cooperation. Meetings normally alternate between Canada and the United States with the host country providing the chairman.

Mutual Aid.-Canada's contributions to NATO are outlined on p. 177.
Rates of Pay Issuable to Canadian Forces.-The entire pay structure for comparable ranks in the three Services is on a uniform basis. Tables 1 and 2 contain the monthly rates of pay for officers and men, respectively, effective Oct. 1, 1966. Equivalent ranks for the Navy, Army and Air Force are listed following Table 2.

## 1.-Monthly Rates of Pay for Officers of the Canadian Armed Forces, Effective Oct. 1, 1566

| Army Rank and Equivalentt | Basic | Incentive Pay Category ${ }^{\text {a }}$ |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|  | Opficers other than Phots, Radio Navigatora, Medicad, Dental and Legal |  |  |  |  |  |  |  |  |
|  | \$ | \$ | + | * | \$ | \$ | \$ | \$ | \$ |
| 2nd Lientenant................... | 3552 | 580 | 595 | $\cdots$ | $\cdots$ | $\cdots$ | $\cdots$ | $\ldots$ | $\cdots$ |
| Lieutenant...................... | 540 | 580 | 595 | $\cdots$ | ... | ... | ... | ** | $\ldots$ |
| Lieutenant commisaioned from the ranks. | 645 | 665 | 685 | 705 | 725 |  |  | ... |  |
| Captsin............................ | 697 | 722 | 747 | 772 | 797 | 822 | 847 | .... | $\ldots$ |
| Major............................... | 893 | 923 | 953 | 983 | 1,013 | 1,043 | -.. | $\ldots$ | ... |
| Lieutenant-Colonel ................ | 1,084 | 1,119 | 1,154 | 1,189 | 1,224 | $\cdots$ | ... | $\ldots$ | $\cdots$ |
| Colonel. ........................... | +,349 | 1,394 | 1.439 | $\ldots$ | ... | ... | $\ldots$ | $\cdots$ | ... |
| Brigadier......................... | 1, 609 | 1.659 | 1,709 | ... | $\cdots$ | $\ldots$ | ... | ... | $\cdots$ |
| Mapor-General.................... | 1,904 | ... | $\cdots$ | $\ldots$ | $\ldots$ | ... | $\ldots$ | $\ldots$ | $\ldots$ |
| Lieutenant-General. ............... | 2,084 | ... | $\cdots$ | ... | ... | ... | ... | ... | ... |
|  | Prots |  |  |  |  |  |  |  |  |
|  | \$ | \% | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| Lieutenant...................... | 686 | 751 | 766 | *** | $\cdots$ | $\cdots$ | $\cdots$ | $\cdots$ | ** |
| Leutensint commissioned irom the ranks. | 808 | 833 | 868 | 903 | 988 |  |  |  |  |
| Captain............................ | 854 | 884 | 924 | 964 | 1,004 | 1,044 | 1,084 | 1,104 | 1,124 |
| Major, . . . . . . . . . . . . . . . . . . . . . . . | 1,072 | 1,102 | 1,132 | 1,162 | 1,192 | 1,222 |  |  |  |
| Lieuteraut-Colonel. . . . . . . . . . . . . . . | 1,234 | 1,289 | 3,304 | 1,339 | 1,374 | ... | . | ... | $\cdots$ |
| Colonel. . . . . . . . . . . . . . . . . . . . . . | 1,424 | 1,469 | \$.514 | ... | ... | ... | ... | ... | ... |
|  | Radio Navtators |  |  |  |  |  |  |  |  |
|  | * | \$ | \$ | \$ | \$ | 5 | \$ | \$ | \% |
| Lieutenant...................... | 665 | 730 | 745 | $\cdots$ | ... | ... | $\cdots$ | $\cdots$ | $\cdots$ |
| Lieutenant commissioned irom the ranks. | 747 | 772 | 807 | 842 | 877 |  |  |  |  |
| Captsin............................. | 797 | 827 | 887 | 907 | 947 | 987 | 1,027 | 1,047 | 1,067 |
| Major.. | 968 | 998 | 1,028 | 1,058 | 1,088 | 1,118 | L | ... |  |
| Lieutenant-Colonel | 1,159 | 1,194 | 1,229 | 1,284 | 1,299 |  | ... | ... |  |
| Colonel. | 1,424 | 1,469 | 1,514 | 1,284 |  | $\cdots$ | ... |  |  |
|  | Medical |  |  |  |  |  |  |  |  |
|  | \$ | \$ | \$ | $\delta$ | \% | \$ | \$ | \$ | \$ |
| Captain. . . . . . . . . . . . . . . . . . . . . | 694 | 728 | 762 | 1,042 | 1,090 | 1,138 | 1,186 | 1,233 | ... |
| Major............................. | 1,180 | 1,228 | 1,276 | 1,324 | 1,372 | 1,421 | ..* | ... | $\cdots$ |
| Ljentenant-Colonel. | 1,371 | 1,419 | 1,467 | 1,515 | $\cdots$ | -• | $\cdots$ | $\cdots$ | $\cdots$ |
| Colonel. | 1,503 | 1,544 | 1,586 |  | ... | ... | ... | . | ... |
| Bricadier. | 1,709 | 1.751 | 1,792 | ... | $\ldots$ | ... | ... | $\cdots$ | ... |
|  | Dental |  |  |  |  |  |  |  |  |
|  | \$ | * | \$ | \$ | \% | \$ | \$ | \$ | \$ |
| Captsin............................ | 88 I | 915 | 949 | 887 | 1,025 | 1,082 | 1,130 | 1,215 | ** |
| Major............................ | 1,031 | 1,079 | 1.127 | 1,175 | 1,223 | 1,270 | $\ldots$ | ... | $\cdots$ |
| Coieatenant-Colonel | 1,276 | 1,324 | 1,372 | 1,421 | ... | ... | ... | - | ... |
| Colane.. | 1,382 | 1,410 | 1,458 | 1,506 | ... | ... | $\ldots$ | ... | ... |
|  | Legat |  |  |  |  |  |  |  |  |
|  | \$ | * | \$ | \% | \$ | \$ | \$ | \$ | \% |
| Lieutenant......................... | 584 |  |  |  |  |  |  |  |  |
| Captain. <br> Major | 689 | 667 | 678 | 712 | 745 | 778 |  |  | … |
| Major.......... | 835 1148 | ${ }^{869}$ | ${ }^{907}$ | 945 | 983 | 1,043 | 1,082 | 1,137 | $\cdots$ |
| Colonel ....Colon | 1,148 | 1,196 | 1,244 | 1,293 | 1,372 | 1,421 | ... | .. | $\ldots$ |
| Colonel........................... | 1,499 | 1,594 | 1,689 | $\cdots$ | $\cdots$ | $\cdots$ | ... | $\ldots$ | ... |
| Brigadier.. | 1,759 | 1,809 | 1,859 | ... | $\cdots$ | ... | ... | $\cdots$ | $\cdots$ |

[^389]
## 2.-Monthly Rates of Pay for Men of the Canadian Armed Forces, Effective Oct. 1, 1966

| Army Rank and Equivalent1 | Pay Level | Incentive Pay Category: | Pay Field |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 3 | 4 | 5 | 6 | 7 |
|  |  |  | \$ | * | \$ | \$ | \$ |
| Private................................ | Apprentice | ... | 140 | 140 | 140 | 140 | 140 |
| Private...... | $t$ | ... | 207 | 207 | 207 | 207 | 207 |
| Private........ | 2 | ... | 225 | 225 | 225 | 225 | 225 |
| Private.................................. | 3 | ... | 295 | 298 | 302 | 308 | 310 |
| Private................................ | 4 4 4 4 4 | 17 2 3 3 | 335 351 871 394 404 | 340 350 376 400 410 | $\begin{aligned} & 345 \\ & 361 \\ & 381 \\ & 406 \\ & 416 \end{aligned}$ | 350 368 387 412 422 | 335 378 393 418 428 |
| Corporal................................. | $\begin{aligned} & 8(A) \\ & 5(A) \\ & 5(A) \\ & 5(A) \\ & 5(A) \\ & 5(A) \\ & 5(A) \end{aligned}$ | $\begin{aligned} & \dddot{1} \\ & 2 \\ & 3 \\ & 4 \\ & 5 \\ & 6 \end{aligned}$ | $\begin{aligned} & 435 \\ & 435 \\ & 441 \\ & 444 \\ & 447 \\ & 450 \\ & 453 \end{aligned}$ | $\begin{aligned} & \hline 454 \\ & 457 \\ & 460 \\ & 463 \\ & 466 \\ & 469 \\ & 472 \end{aligned}$ | $\begin{aligned} & \hline 468 \\ & 471 \\ & 474 \\ & 477 \\ & 480 \\ & 488 \\ & 486 \end{aligned}$ | $\begin{aligned} & 481 \\ & 484 \\ & 487 \\ & 496 \\ & 493 \\ & 496 \\ & 499 \end{aligned}$ | 491 494 497 500 8098 506 509 |
| Corporal4................................ | $\begin{aligned} & 5(\mathrm{~B}) \\ & 5(\mathrm{~B}) \\ & 5(\mathrm{~B}) \\ & 5(\mathrm{~B}) \\ & 5(\mathrm{~B}) \\ & 5(\mathrm{~B}) \\ & \mathrm{B}(\mathrm{~B}) \end{aligned}$ | $\begin{aligned} & \dddot{1} \\ & 2 \\ & 3 \\ & 4 \\ & 4 \\ & 6 \\ & 6 \end{aligned}$ | $\begin{aligned} & 445 \\ & 448 \\ & 451 \\ & 454 \\ & 457 \\ & 460 \\ & 463 \end{aligned}$ | 484 447 470 473 476 479 482 | $\begin{aligned} & \hline 478 \\ & 481 \\ & 488 \\ & 487 \\ & 490 \\ & 493 \\ & 496 \end{aligned}$ | $\begin{aligned} & 491 \\ & 494 \\ & 4977 \\ & 500 \\ & 503 \\ & 506 \\ & 509 \end{aligned}$ | $\begin{aligned} & 601 \\ & 504 \\ & 507 \\ & 510 \\ & 513 \\ & 516 \\ & 519 \end{aligned}$ |
| Sergeant............................... | $\begin{aligned} & 6 \\ & 6 \\ & 6 \\ & 6 \\ & 6 \\ & 6 \\ & B \\ & 6 \end{aligned}$ | $\begin{aligned} & \dddot{1} \\ & 2 \\ & 3 \\ & 4 \\ & 4 \\ & 6 \\ & 6 \end{aligned}$ | 485 490 495 550 505 510 515 | 506 511 516 521 $\$ 26$ $\$ 81$ 836 | $\begin{aligned} & 523 \\ & 528 \\ & 583 \\ & 538 \\ & 543 \\ & 548 \\ & 553 \end{aligned}$ | 538 <br> 543 <br> 548 <br> 553 <br> 558 <br> 368 <br> 568 | $\begin{aligned} & \mathbf{5 5 0} \\ & 555 \\ & 560 \\ & 565 \\ & 570 \\ & 575 \\ & 580 \end{aligned}$ |
| Staff Sergeant...... | $\begin{aligned} & 6 \\ & 6 \\ & 6 \\ & 8 \\ & 6 \\ & 6 \\ & 6 \end{aligned}$ | $\begin{aligned} & \dddot{1} \\ & 2 \\ & 8 \\ & 4 \\ & 5 \\ & 6 \end{aligned}$ | $\begin{aligned} & \hline 515 \\ & 520 \\ & 525 \\ & 530 \\ & 535 \\ & \mathbf{5 4 0} \\ & 545 \end{aligned}$ | 536 541 $\$ 46$ 551 556 861 566 | 553 558 563 568 573 578 583 | $\begin{aligned} & 568 \\ & 573 \\ & 578 \\ & 583 \\ & 588 \\ & 588 \\ & 598 \\ & 598 \end{aligned}$ | $\begin{aligned} & 580 \\ & 585 \\ & 550 \\ & 595 \\ & 600 \\ & 805 \\ & 610 \end{aligned}$ |
| Warrant Officer Clase 2................. | $\begin{aligned} & 7 \\ & 7 \\ & 7 \\ & 7 \\ & 7 \\ & 7 \end{aligned}$ | $\begin{aligned} & \dddot{1} \\ & 2 \\ & 3 \\ & 4 \\ & 4 \\ & 5 \\ & 6 \end{aligned}$ | 561 568 575 582 589 596 603 | $\begin{aligned} & 582 \\ & 589 \\ & 596 \\ & 603 \\ & 610 \\ & 617 \\ & 624 \end{aligned}$ | $\begin{aligned} & 699 \\ & 800 \\ & 613 \\ & 620 \\ & 627 \\ & 634 \\ & 641 \end{aligned}$ | 614 621 628 635 642 649 656 | 626 <br> 633 <br> 640 <br> 640 <br> 647 <br> 684 <br> 661 <br> 688 |
| Warrant Officer Class 1................ | $\begin{aligned} & 8 \\ & 8 \\ & 8 \\ & 8 \\ & 8 \\ & 8 \\ & 8 \\ & 8 \end{aligned}$ | $\begin{aligned} & \dddot{1} \\ & 2 \\ & 3 \\ & 4 \\ & 5 \\ & 8 \\ & 8 \end{aligned}$ | $\begin{aligned} & 642 \\ & 651 \\ & 660 \\ & 669 \\ & 678 \\ & 687 \\ & 696 \end{aligned}$ | $\begin{aligned} & 867 \\ & 676 \\ & 685 \\ & 694 \\ & 703 \\ & 712 \\ & 721 \end{aligned}$ | $\begin{aligned} & 686 \\ & 695 \\ & 704 \\ & 713 \\ & 722 \\ & 731 \\ & 740 \end{aligned}$ | $\begin{aligned} & 702 \\ & 711 \\ & 720 \\ & 779 \\ & 738 \\ & 747 \\ & 750 \end{aligned}$ | $\begin{aligned} & 775 \\ & 724 \\ & 733 \\ & 742 \\ & 751 \\ & 760 \\ & 760 \end{aligned}$ |

[^390]Equivalent Ranks-Navy, Army and Air Force

| Nary | Army | Air Porce |
| :---: | :---: | :---: |
| Ordinary Seaman | Private Recruit | Aircratteman 2nd Class |
| Orclinary Seaman | Private Recruit | Aircrafteman 2nd Class |
| Orasie Rate | Private Trained | Aircraltaman 1st Class |
| Trained | Basic Rate | Aircraltsman ist Clas |
| Able Seaman | Private Trained Higher Rate | Leading Aircraltaman |
| Leading Seaman | Corporal | Corporal |
| Petty Officer 2nd Class | Sergeant | Sergeant |
| Petty Officer 1st Class | Staff Sergeant | Flight Sergeant |
| Cbief Petty Officer 2nd Class | Warrant Officer Claes 2 | Warrant Officer Class 2 |
| Chief Petty Officer lat Class | Warrant Officer Class 1 | Warrant Officer Class 1 |
| Naval Cadet | Officer Cadet | Officer Cadet |
| Acting Sub-Lientenant | 2nd Lientenant | Pilot Officer |
| Sub-Lieutenant | Lieutenant | Flying Officer |
| Commissioned Offer | Lieutenant, commisaioned from the ranks | Flying Oficer, commissioned from the ranks |
| Lieutenant | Captain | Flight Lientenant |
| Lieutenant-Commander | Major | Squadron Leader |
| Commander | Lieutenant-Colonel | Wing Commapder |
| Captain | Colonel | Group Captain |
| Rear-Admiral | Major-General | Air Vice-Marshal |
| Vice-Admiral | Lientenant-General | Air Marshal |

Allowances Issuable to Canadian Forces.-The following are the most common entitlements, aside from pay, for members of the regular Forces. Other entitlements related to special duties and to the reserve Forces are not shown.

Aircrew Allowance.-Aircrew allowance in varying amounts may be paid to a member of aircrew, or an officer or man undergoing flying training to become a pilot, navigator or other member of aircrew if he is not already receiving the special rate of pay applicable to pilots or navigators.

Oufft Allowance and Clothing Upkeep Allowoance.-Officers receive a single payment of $\$ 450$ on appointment and Warrant Officers Class 1 receive $\$ 270$. Men receive a free issue of clothing on joining and thereafter a monthly clothing upkeep allowance of $\$ 7$; Navy Petty Officers 1st Class and above receive $\$ 8$. Women receive a free issue of clothing on joining with an underclothing allowance of $\$ 15$, and thereafter a monthly clothing allowance of $\$ 8$.

Foreign Allowances.-Officers and men posted for duty to a country outside of Canada are entitled to allowances to compensate for additional living expenses or hardships incurred; these vary with rank, appointment and location.

Isolation Allowance.-Isolation allowance, at rates which depend on the specific location, are paid to personnel serving at isolated posts in Canada.

Submarine Allowance.-An officer or man undergoing submarine training or filling an appointment in a aubmarine receives from $\$ 32.50$ to $\$ 115$ a month, depending on rank.

Risk Allowance.-An officer or man actively engaged or undergoing training as a parachutist or on flying duties, and not entitled to aircrew allowance, is paid risk allowance at the rate of $\$ 30$ a month.

Sea Duty Allowance.-An officer or man serving in a ship is entitled to sea duty allowance at the rate of $\$ 15$ a month.

## Section 2.-The Command Structure of the Canadian Forces

The Canadian Forces are organized on a functional basis to reflect the major commitments assigned by the Government. Under this concept, all Forces devoted to a primary mission are grouped under a single commander who is assigned sufficient resources to discharge his responsibilities. Specifically, the Canadian Forces are formed into ten major organizational entities reporting to the Chief of the Defence Staff. These are as follows:-

## Mobile Command

The role of Mobile Command is: to provide military units suitably trained and equipped to support United Nations or other peaceleeping/peace-restoring operations; to provide ground forces, including tactical air support for the protection of Canadian territory; and to maintain operational readiness of combat formations in Canada required for support of overseas commitments.

The Forces assigned include: three infantry brigade groups in Canada; the United Nations Emergency Force in the Middle East; the United Nations Force in Cyprus; one RCAF Reconnaissance Squadron; and one Transport Helicopter Platoon. Two of the brigade groups in Canada are being reorganized to periorm a wide variety of roles and will be provided with air-portable equipment.

## 4 CIBG

4 CIBG is the Canadian contribution to NATO ground forces in Earope. The composition of the brigade is generally similar to the British Infantry brigade group. It also contains a surface-to-surface missile (Honest John) battery in addition to the normal artillery field regiraent.

## 1 Air Drvision

1 Air Division is the Canadian contribution to the strike-reconnaissance forces available to SACEUR. The Division is operationally responsible to 4 Allied Tactical Air Force (4 ATAF) and has eight squadrons equipped with CF-104 Super Starfighters located at three airfields in France and Germany.

## Martitme Command

All Maritime forces, sea and air, on the Atlantic and Pacific Coasta have been placed under the Commander, Maritime Command, with Headquarters in Halifax, N.S. The Maritime Commander (Pacific), who is the Deputy Cormmander, has his Headquarters in Esquimalt, B.C.

The role of the Maritime Command is to defend Canada against attack from the sea; to provide anti-submarine defence in support of NATO (the Commander, Maritime Command is also Commander, Canadian Atlantic Sub-Area, in Allied Command Atlantic); and to conduct search and rescue operations on the East and West Coasts of Canada. A secondary role is to provide sea lift in support of Mobile Command.

The Maritime Forces are composed of the following ships: one aircraft earrier equipped with twin-engine Tracker aircraft and Sea King helicopters; 22 destroyers, escort-type; two supply ships; two submarines; and six small support and training vessels. There are four air squadrons and six naval air squadrons in service.

## Air Defence Command

Air Defence Command participates jointly with the United States in the air defence of North America, through NORAD. It has functional control of three interceptor squadrons, two SAM squadrons, one SAGE control centre and two transcontinental radar lines. Operational control is exercised by HQ NORAD.

## Air Transport Command

The role of Air Transport Command is to provide air transport support to Canadian Forces everywhere, and to conduct search and rescue operations in the Eastern Search and Rescue Area (roughly, Ontario and Quebec). It has four squadrons operating short-range, long-range and troop-carrying aircralt and an Air Transport Unit operating Caribou and Otter aircraft from El Arish, Egypt, in support of UNEF.

## Trating Command

The role of Training Command is to provide individual training for the Forces and to conduct search and rescue operations within the Western Search and Rescue Area (roughly, Manitobs, Saskatchewan and Alberta). All existing training units of the RCN, the Canadian Army and the RCAF where individual training is carried out have been plaped under functional control of Training Command. The Canadian Services Colleges (RMC, Royal Roads and CMR), the Staff Colleges, and medical/dental training are under the direct control of Canadian Forces Headquarters. (See p. 1178.) Land/Air Warfare operational training is the responsibility of Mobile Command. Basic parachute training and basic fixed wing or helicopter pilot training are a Training Command responsibility.


#### Abstract

Thi Canadian Forces Commonications System (CFCS) The role of the CFCS is to provide fixed communications networks for the Forces and to provide a national comrnunications system for survival operations (civil defence). To carry out this role, CFCS commands all fixed communications installations within Canada.

\section*{The Reserve and Survival Organization}

Administration of reserves is a responsibility of the Deputy Chief of Reserves (twostar general) at CFHQ. Command and administration of the Army Reserves is effected through 12 District Headquarters organized on a geographical basis. Although the Deputy Chief of Reserves has been given responsibility for Naval Reserve Divisions and RCAF Auxiliary Units, these report to the Deputy Chief through the Commander, Naval Divisions and functional Commanders, as appropriate.

The role of the Organization is to provide aid to the civil power, emergency forces for national survival, and provincial representation and to provide a training force to support the Regular Forces.

\section*{Materiel Command}

The role of Materiel Command is to provide logistic support of the Forces, i.e., procurement, provisioning and supply of materiel. To carry out this role, Materiel Command controls the operations of naval dockyards, ordnance depots, engineer depots, supply depots, repair depots and base workshops in Canada.


## Administration of Military Bases in Canada

Stafis and services required below Command Headquarters level to administer and support units based in a particular locality are being organized on Canadian Forces bases. The primary role of each base is to provide base-level administration and supporting services to those units located on or near the base. Each base has been allocated to a functional commander, to whom the base commander reports. The base commander is provided with sufficient staff, with representation from the four functional branches, to command and administer the base.

## Section 3.-Operations and Training of the Canadian Forces

## The Royal Canadian Navy

The Fleet.-As of December 1966, the RCN had 42 ships in commission and one submarine of the Royal Navy under RCN operational control at Halifax. HMCS Ojibwa, the first of three " $O$ " Class conventional submarines, had completed her first year with the Atlantic Fleet; the second submarine, Onondaga, was due to commission in May 1967 and the third, Okanagan, was estimated for completion in early 1968. The aircraft carrier Bonaventure was undergoing extensive refit, scheduled for completion in August 1967 Fraser, the last of seven St. Laurent Class destroyers converted to helicopter operation, was ready for service in the fall of 1966 , as was the fast hydrofoil craft. HMCS Bras d'Or (FHE 400). Work on Terra Nova, the first of seven ships of the Restigouche Class to be modernized, was under way, scheduled for completion in the spring of 1968; modernization of the second ship will start in March 1967 and the last ship will be completed in September 1969. Construction of the research vessel, Quest, which will serve on the East Coast, started in August 1966 and construction of two operational support ships, Protecieur and Preserver, began in December. A new class of four destroyer escorts having helicopter capabilities is projected for the future-construction of the first will commence in the fall of 1967. A former Bangor Class Fleet Minesweeper, Granby, now being utilized as a Clearance Diving Depot Ship, will also be disposed of in 1967 and will be replaced by an ocean eacort to be re-named Granby.

Training--The major training establishments of the RCN are CFB Cornwallis near Digby, N.S.; Fleet School Shearwater near Dartmouth, N.S.; Fleet School Stadacona at Halifax, N.S.; Fleet School Hochelaga at LaSalle, Que.; HMCS Gloucester near Ottawa, Ont.; and Fleet School Naden at Esquimalt, B.C.

Men and women entering the RCN receive their basic training at CFB Cornwallis where the courses are normally 14 weeks in length. English-language training is provided for French-speaking recruits at CFB St. Jean, the courses lasting up to a maximum of 21
weeks. Cadets entered under the Regular Officer Training Plan (ROTP) or College Training Plan (CTP) receive most of their early training at the Canadian Services Colleges (see p. 1178) or a Canadian university; those entered on a short-service appointment train in HMCS Venture at Esquimalt, B.C. All cadets receive practical training with the Fleet at various times of the year. A University Naval Training Division program provides junior officers for the RCN and the RCN Reserve. The cadets are required to complete two winter-training periods and two summer-training periods and certified specified courses.

Royal Canadian Naval Reserve.-The recruiting and training of officers and men of the RCN Reserve is conducted mainly through 16 Naval Divisions across Canada under the over-all command of the Commanding Officer Naval Divisions, with Headquarters at Hamilton, Ont. Naval Divisions are established in the following centres:-

St. John's, Nfld., HMCS Cabot<br>Halifax, N.S., HMCS Scotian<br>Saint John, N.B., HMCS Brunsuicker<br>Quebec, Que., HMCS Montcalm<br>Montreal, Que., HMCS Donnacona<br>Toronto, Ont., HMCS York<br>Ottawa, Ont., HMCS Carleton<br>Kingston, Ont., HMCS Cataraquz

Hamilton, Ont., HMCS Star Windsor, Ont., HMCS Hunter Port Arthur, Ont., HMCS Grifon<br>Winnipeg, Man., HMCS Chippawa<br>Saskatoon, Sask., HMCS Unicorn<br>Calgary, Alta., HMCS Tecumseh<br>Vancouver, B.C., HMCS Discovery<br>Esquimalt, B.C., HMCS Malahat

Naval Divisions, commanded by Reserve officers, provide both basic and specialized training for officers and men of the RCN Reserve. The Great Lakes Training Centre at Hamilton conducts new-entry reserve training afloat during the summer months.

Royal Canadian Sea Cadets.-Royal Canadian Sea Cadets, sponsored by the Navy League of Canada and supported by the RCN, consist of 174 corps, supervised by 15 naval officers responsible to the Commanding Officer Naval Divisione. Instruction is carried out by RCSCC officers. Two training establishments--Cornwallis on the East Coast and Quadra on the West Coast-accommodate officers and cadets for two-week training periods in the summer. In addition, selected cadets receive a seven-week training course at naval establishments. Sea experience is provided throughout the year in various types of ships of the RCN. As at October 1966, the strength of the corps was 1,015 officers and 9,221 cadets.

## The Canadian Army

Operations in 1966.-In fulfilment of military obligations under the North Atlantic Treaty, Canada continued to provide ground forces for the defence of Western Europe. The 4th Canadian Infantry Brigade Group, the major units of which were the Lord Strathcona's Horse (Royal Canadians), the 2nd Regiment Royal Canadian Horse Artillery, No. 1 Surface to Surface Missile Battery, 2nd Battalion The Royal Canadian Regiment, 1st Battalion Princess Patricia's Canadian Light Infantry (replaced by 2nd Battalion in late 1966), and the 2nd Battalion Royal 22e Regiment, constituted the Land Forces contribution to NATO in Germany. The Headquarters of the Brigade is at Soest and the married quarters are located in the vicinity of Soest, Werl, Hemer and Iserlohn. The battalion group (The 1st Battalion The Black Watch [Royal Highland Regiment of Canadal) that Canada provided to form part of Allied Command Europe Mobile Forces (Land Component) was exercised in North Norway in early 1966. It is stationed in Canada but held in readiness for employment should the Mobile Force be activated.

The Canadian Armed Forces continued to provide forces in support of United Nations operations as follows: (1) A force of approximately 794 officers and men forms part of the UN Emergency Forces in the Middle East with tasks of providing engineer services, communications, stores, transport, workshop and postal services for the Force. (2) A force of 880 officers and men forms part of the UN Force in Cyprus; the Canadian contribution consisted of a reconnaissance equadron, an infantry battalion, a Canadian

Contingent Headquarters and a Canadian element for the UN Headquarters. (3) Caradian Armed Forces contributions to other UN missions included some 39 officers and men employed in Palestine, Kashmir and Korea (the UN India-Pakistan Observer Mission was concluded in the early spring of 1966). (4) A specially trained and equipped infantry battalion (1st Battalion The Canadian Guards) is maintained in Canada to provide a force for service in support of the UN in any part of the world on short notice.

In addition to its UN commitments, the Canadian Armed Forces, as a result of Canadian participation in the International Commissions for Supervision and Control in Viet-Nam, Cambodia and Laos, continued to provide approximately 65 officers and men for truce supervisory duties in Indo-China.

Canadian Armed Forces training teams are being maintained in Ghana and Tanzania to assist in the training of armed forces of those countries. The Canadian Armed Forces provided 21 all ranks for the Ghana team and 69 all ranks for the Tanzania team. A number of officer cadets and other ranks from Ghana, Tanzania, Nigeria, Barbados, Jamaica, Trinidad and Tobago, Malaysia, and Zambia have received training in Canadian Forees schools.

Training.-Most of the recruit, basic and advanced training in support of the Canadian Army Regular takes place at schools under the supervision of Training Command. During 1966, a training enrolment of 6,794 recruits and the corps training of officers and men of the Army were carried out at regimental depots, units and schools; 348 officers completed promotion qualification examinations; 64 officers attended the Canadian Army Staff College; and 10 commenced courses at Commonwealth Staff Colleges. Qualifying courses for junior and senior NCO were conducted at Training Command schools. Officers from the RCAF and RCN as well as officers from Australia, Belgium, Britain, Germany, India, Pakistan, Tanzania, Jamaica, Zambia and the United States attended courses at Canadian Schools.

English and French language training is available to all ranks. The R22eR Depot (Language Training Company) conducts six-month French language courses for Englishopeaking officers and NCOs, and a number of French-speaking recruits and potential NCOs receive English language training.

Trades training is given at schools and units. When required, the facilities of civilian and allied service schools are used to supplement training at service establishments.

Under an apprentice training program, selected young men are trained as soldier tradesmen and prepared for advancement to senior NCO ranks. During 1966, 83 apprentices were enrolled and 29 civilian teachers were employed to provide academic instruction for about 250 apprentice soldiers. Academic credits are obtained from the educational anthorities of the province where the training is conducted.

In 1966, the training of the Field Force took place under the direction of Mobile Command. Airborne continuation training was carried out by designated units in conjunction with unit exercises. The air transportable Ace Mobile Force Battalion participated in a winter exercise in Norway under cold weather conditions. Parachute and air supply courses were conducted at the Canadian Joint Air Training Centre at Rivers, Man., and courses in Arctic training at Camp Borden, Ont. Collective training for units in Canada was carried out at Camp Gagetown, N.B., and Camp Wainwright, Alta. Allarms training comprised sub-unit and unit training, and culminated in exercises at the Brigade Group level.

Under the Regular Officer Training Plan (ROTP), selected students are trained for commissions in the Canadian Forces at the Canadian Services Colleges (see p. 1178) and at Casadian universities and colleges that have university reserve units. Also, university reserve units form an integral part of the campus life at most universities. These are maintained primarily to produce officers for the Reserve components of the Canadian Forees and receive training similar to that given members of the ROTP.

Canadian Army (Militia).-The recently revised priority of roles of the Militia is: support of the Regular Army; provision of a training force; and assistance for internal security and the provision of specialists to assist in staffing national survival installations in times of national emergency. Militia training is intended to produce personnel and units well trained in the basic military skills and techniques of their corps and in the basic skills for survival operations. In consonance with these newly assigned roles, the Militia was extensively reorganized during the period November 1964 to March 1965. Based largely upon recommendations of the Ministerial Commission on the Reorganization of the Canadian Army (Militia), a total of 172 self-accounting units, having an approved establishment of 41,718 all ranks, is authorized. Concurrently, personnel and training policies were revised. Emphasis has been placed on youth, physical fitness, professional competence and vigorous leadership.

Royal Canadian Army Cadets.-The aim of the Army Cadet organization is to provide cadets with a sound knowledge of military fundamentals based on the qualities of leadership, patriotism and good citizenship. Planning and the supervision of organization, administration and training are carried out by the Canadian Army (Regular), and 136 officers and men are employed continuously on these duties. Training and administration of Army cadets is the responsibility of officers of the Cadet Services of Canada, a subcomponent of the Reserves, and civilian instructors. As of Oct. 30, 1966, cadet and civilian instructors numbered 2,103.

Cadets, aged 14-18 inclusive, take a progressive three-year course in basic military subjects at their cadet corps and selected cadets are given training at summer camps. In 1966, 5,062 cadets attended six-week trades and specialist courses at Aldershot, N.S., Farnham, Que., Ipperwash and Camp Borden, Ont., Clear Lake, Man., and Vernon, B.C.; 1,688 cadets attended two-week cadet leader and special camps at Aldershot, N.S., Montreal, Que., Ipperwash, Ont., and Clear Lake and Rivers, Man.; 215 master cadets, one officer and six cadets from Britain attended the Banff National Army Cadet Camp, Alta., for four weeks; 58 cadets proceeded on an exchange of cadets between Canada and Barbados, Jamaica and Trinidad and Tobago during the summer of 1966 and one officer and six cadets attended the Outward Bound Course in Towyn, Wales; 388 cadet instructors attended qualifying courses of up to six weeks and 424 cadet and civilian instructors were employed in training and administrative duties at summer camps. As of October 1966, there were 55,928 cadets enrolled in 494 corps.

## The Royal Canadian Air Force

Operations in 1966. -The RCAF contribution to the air defence of North America during the year consisted of three CF-101B interceptor squadrons, two Bomarc surface-toair missile squadrons and twenty-nine radar sites. Two of these radar sites were deactivated in the latter half of the year. These forces, together with the Distant Early Warning Line (DEW), operated under the operational control of North American Air Defence Command (NORAD). No. 1 Air Division, Canada's NATO contribution in Europe, operated with eight squadrons of CF-104 aircraft. Six of these squadrons were employed in the strike attack role and the other two were employed in the photo reconnaissance role.

The RCAF Maritime Air Command contributed four land-based maritime squadrons to the Maritime Defence of North America; three of these, based on the East Coast, are equipped with Argus aircraft, the largest and most modern anti-submarine aircraft in the world. A continuous program of aircraft modernization and re-equipping with improved anti-submarine devices was conducted throughout the year. The East Coast squadrons and the Neptune aircraft squadron on the West Coast participated in a number of national, international and NATO anti-submarine exercises, and maintained daily patrols and surveillance of ocean areas adjacent to the Canadian coastlines. Early in the year the RCAF Maritime Air Command became an integral part of the new integrated Maritime Command.

Air Transport Command (ATC) continued to provide support to the Air Division and to the Army Brigade in Europe using long-range Yukon and Hercules aircraft. Airlift support was provided to the UN Emergency Force Middle East and to the UN contingents in Cyprus. Flying units, operating Caribou and Otter aircraft, were maintained in Egypt and India/Pakistan in support of UNEF, UNMOGIP and UNIPOM. In addition, ATC provided a major contribution to the Zambian oil airlift. In Canada, ATC airlifted Department of National Defence personnel and cargo from coast-to-coast and into the Arctic regions. Hercules aircraft were employed for paratroop training of the Canadian Army, and T-33 aircraft carried out routine photographic missions for the Department. Search and rescue services were provided in the Canadian areas of responsibility. Throughout the year, the RCAF flew more than 6,000 hours on search and rescue missions involving missing persons, aircraft and marine vessels. Altogether, some 2,000 separate incidents were dealt with.

Training.-Each year the RCAF gives basic training to several thousand officers and men to meet retirements, releases and the introduction of new equipment. English language training on initial enlistment is given to French-speaking personnel-at St. Jean, Que., for officers and airmen. Course length is variable, up to a maximum of 21 weeks. Advanced trades training is given within the service, training on specialized equipment is obtained also from industrial firms, and some officers attend postgraduate courses at Canadian and United States universities. In addition, aircraft trades training is given to a number of trainees from developing countries.

Aircrew selection is carried out at Officers' Selection Unit, CFB Downsview, Ont. Indoctrination training for aircrew officer cadets takes place at Central Officers' School, Venture, B.C. RCAF pilots are given basic and advanced jet training at Moose Jaw, Sask., and Gimli, Man., and advanced multi-engine training at Portage la Prairie, Man. Radio navigators are trained at Winnipeg, Man. In the year ending Mar. 31, 1967, approximately 124 RCAF pilots and 80 radio navigators will complete training to "wings" standard; pilot training on piston engined aircraft will be provided for 37 RCN and six CA(R) officers. Under bilateral agreements, jet training will be provided for 35 Danish, 25 Norwegian and four Malaysian pilots, radio navigation training for three Norwegian and two Danish navigators, basic helicopter training for three Danish naval pilots and one Jamaican army officer, and piston engine training for 15 Malaysian and 31 Tanzanian pilots.

Indoctrination training for newly commissioned non-flying list officers is given at CFB Esquimalt, B.C. and technical training at CFB Clinton, Ont. Basic and advanced trades training for airmen is given at technical trades schools at Camp Borden and Clinton, Ont. Trade advancement training to help airmen improve their job proficiency and to qualify for higher trade grouping and pay is provided to Regular and Reserve personnel. Operational training on specific aircraft and equipment is given at field technical training units and operational training units situated throughout Canada. Semi-annual trade examinations are written under the direction of the Training Standards Establishment, Trenton, Ont.

RCAF Reserves.-The active sub-components of the RCAF Reserves are designated as the Auxiliary and the Primary Reserve.

The Auxiliary is made up of four Auxiliary Wing Headquarters located in Montreal, Toronto, Winnipeg and Edmonton and six Flying Squadrons located in the same cities; Wing Headquarters direct the operations, training and administration of the Flying Squadrons in their respective areas. All Flying Squadrons are equipped with the DHC-3 Otter. Their role is light transport, national survival, and search and rescue services. Light transport and national survival exercises are carried out in conjunction with Regular and Reserve formations of the RCN and the Canadian Army as well as the RCAF. Search and rescue operations are often carried out in accompaniment with civilian and RCAF Regular counterparts. In the event of emergency, these squadrons would be used to support civilian and military requirements.

The Primary Reserve is composed of Air Cadet Officers who staff the Royal Canadian Air Cadet Squadrons throughout Canada, of Manning Support Officers who are employed for 15 to 30 days each year in career counselling duties at RCAF recruiting units, and of University Squadron Staff Officers whose main function is to train members of the University Reserve Training Plan (URTP) during the academic year.

Each summer, approximately 130 first-year URTP undergraduates attend an officers training course at Reserve Officers School. Following this initial training, specialized training is provided in aeronautical engineering, armament, administration, accounts, construction engineering, mobile support equipment, recreation, supply or telecommunications. Second-year cadets continue the formal or contact training begun the previous year and a small number of outstanding cadets is selected for a third summer of contact training at a field unit.

Royal Canadian Air Cadets.-The Air Cadet movement operates on the basis of a partnership between the Air Cadet League of Canada, a voluntary civilian organization, and the Royal Canadian Air Force. The League sponsors and administers Air Cadet activities while the RCAF provides training personnel, syllabi and equipment and also assists the League in organization and administration. The objectives of air cadet training are to encourage air cadets to develop the attributes of good citizenship, to stimulate in them an interest in aviation and space technology and to help them develop a high standard of physical fitness, mental altertness and discipline. The authorized ceiling of cadet enrolment is 28,000 ; the strength at Oct. 1, 1966 was 25,596 , attached to 369 squadrons across Canada.

During the summer of 1966, camps were conducted at Canadian Forces Bases at Greenwood, N.S., St. Jean, Que., Trenton, Ont., and Penhold, Alta., attended by more than 7,000 eadets and 858 officers and instructors. A seven-week Senior Leaders' Course was held for 240 cadets at Camp Borden, Ont. A Bush Familiarization Course, teaching the techniques of survival and ground search, was conducted at Namao, Alta., for 27 cadets. Under the International Exchange Visits Program for 1966, 62 cadets were exchanged with Austria, Belgium, Britain, Denmark, France, Italy, Israel, the Netherlands, Norway, Sweden, Switzerland, Turkey, the United States and West Germany.

About 250 senior air cadets receive flying training annually at flying clubs through RCAF sponsored scholarships; 74 additional scholarships were awarded by the Air Cadet League and other organizations in 1966.

## Section 4.-Services Colleges and Staff Training Colleges

Canadian Services Colleges.-The three Canadian Services Colleges are the Royal Military College of Canada founded at Kingston, Ont., in 1876, Royal Roads which was established in 1941 near Victoria, B.C., as a school for naval officers, and College militaire royal de Saint-Jean established at St. Jean, Que., primarily to meet the needs of Frenchspeaking cadets. The Royal Military College and Royal Roads were constituted as Canadian Services Colleges in 1948, and Collège militaire royal de Saint-Jean was opened in 1952. In 1959, the Legislature of the Province of Ontario granted the Royal Military College a charter empowering it to grant degrees.

The purpose of the instruction and training at the Services Colleges is to impart the knowledge, to teach the skills and to develop the qualities of character and leadership essential to officers of all three Armed Services. The courses of instruction provide a sound and balanced liberal scientific and military education leading to degrees in arts, science and engineering which are granted by the Royal Military College.

For cadets entering the Royal Military College and Royal Roads, the course is of four years duration. As the third and fourth years of the course are given only at the Royal Military College, cadets entering Royal Roads must proceed to that College for the final
two years of the arts, science or engineering courses. For cadets entering Collège militaire royal de Saint-Jean, which gives a preparatory year, the course is of five years duration. Cadets take the preparatory, first and second years at that institution and the final two years at the Royal Military College.

For admission to the Royal Military College of Canada and to Royal Roads, an applicant must have obtained senior matriculation or equivalent standing. For admission to College militaire royal de Saint-Jean, an applicant must have junior matriculation or equivalent. A candidate who has obtained a Bachelor of Arts degree at a classical college or has completed first year science or philosophy II at Collège Mont Saint-Louis may apply for entry into first year at College militaire royal de Saint-Jean. A candidate must be single, a Canadian citizen or British subject normally resident in Canada, and be physically fit. The age limits for admission to the first year are between 16 and 21 years as of Jan. 1 of the year of entry; for admission to the preparatory year a cadet must have reached bis 16th but not his 20th birthday on Jan. 1 of the year of entry.

Most cadets entering the Services Colleges enrol under the Regular Officer Training Plan. Applicants accepted enrol according to their choice, as officer cadets in the Royal Canadian Navy, the Canadian Army or the Royal Canadian Air Force. Costs of tuition, uniforms, books, instruments and other fees are borne by the Department of National Defence and cadets are paid $\$ 180$ a month. Cadets are charged $\$ 85$ a month for board and lodging. On successfully completing their academic and military training, cadets are granted permanent commissions in the Regular Force.

A limited number of high school students may be selected to enter the Services Colleges on payment of tuition fees, etc. Graduates are granted commissions and serve in the Reserve components of the Forces. Young men who qualify for Dominion Cadetships also serve in a reserve capacity. These Cadetships are awarded by the Federal Government in recognition of a candidate's parent having been killed, died or been severely incapacitated in the service of one of Canada's Armed Forces or the Canadian Merchant Marine during hostilities. A maximum of 15 Dominion Cadetships may be awarded in any one year, five in each Service. Each is valued at $\$ 580$, which covers first-year fees.

During the 1966-67 academic year, 1,139 cadets were in attendance at the Services Colleges, 563 of them at the Royal Military College, 201 at Royal Roads and 375 at Collège militaire royal de Saint-Jean. Of the total, 253 were enrolled in the Navy, 409 in the Army and 477 in the Air Force.

Staff Training Colleges.-The Canadian Army Staff College at Kingston, Ont., gives an 11-month course for the training of officers for staff appointments. Although most of the student body is composed of Canadian Army Officers, officers from the other two Services and from the armies of other Commonwealth and NATO countries also attend. Instruction is based upon the study of précis and references, demonstrations and lectures, and indoor and outdoor exercises. Aside from purely military subjects, the curriculum includes research and development, world affairs and lectures by prominent guest speakers.

The Canadian Forces College at Armour Heights, Toronto, Ont., consists of three colleges for the staff training of officers:-

Staff College.-Officers of Major (equivalent) rank take a 44 -week course to prepare them for assumption of higher rank in the Canadian Armed Forces. Training emphasizes logical and precise written and oral expression of ideas; staff and administrative procedures; scientific and technical developments; and national and international current affairs.

Staff School.-Officers of Captain and Lieutenant (equivalent) rank take a 14 -week course to prepare them to assume junior staff and administrative positions in the Canadian Armed Forces. Training emphasizes military administrative procedures; the conduct of correspondence; and civil and military organization. Students are also introduced to national and international current affairs.

Extension School.-Graduates of the Staff School are provided with extension courses in a variety of military and academic subjects.

National Defence College at Kingston, Ont., the senior defence college, provides an 11-month course of study covering the economic, political and military aspects of the defence of Canada. Senior officers and civil servants from the Armed Forces and Federal Government departments attend, as well as a few representatives from industry. Lecturers are chosen from among the leaders in various fields in Canada and other countries. In addition, tours and visits to certain parts of Canada, the United States, Europe and the Middle East familiarize students with conditions and influences in their own and other countries.

## Section 5.-The Defence Research Board

The Defence Research Board, established in 1947, provides scientific assistance and advice to the Canadian Forces. It consists of a full-time chairman and vice-chairman, two or more ex officio members and nine other appointed members. The ex officio members are the Deputy Minister of National Defence, the President of the National Research Council and such other members as may be appointed by the Minister of National Defence as members representing the Canadian Forces. The other members, appointed by the Governor in Council for three-year terms, are selected from universities and industry because of their scientific and technical backgrounds.

The organization consists of headquarters staff, an operational research corps and seven research laboratories, and liaison offices at London, England, Washington, U.S.A., and Paris, France. Advisory committees composed of leading Canadian scientists provide invaluable assistance to the Board by their consideration of a variety of problems.

The Defence Research Board is an integral and permanent part of the defences of the country. The Chairman is a member of the Defence Council. The Board's fundamental purpose is to correlate the special scientific requirements of the Armed Forces with the general research activities of the scientific community at large. Its efforts are concentrated upon defence problems of particular importance to Canada or for which Canada has unique resources or facilities. Existing research facilities such as those of the National Research Council are used whenever possible to meet the needs of the Armed Forces. The Board has built up new facilities only in those fields that have little or no civilian interest. Close collaboration is maintained with Canada's larger partners; specialization is made possible only through the willingness of Britain and the United States to exchange the results of their broader programs for the less numerous but nevertheless valuable benefits of Canadian research.

The Board operates seven specialized research and development laboratories which are concerned primarily with maritime warfare, guns, rockets and missiles as armaments, defence against missiles, research on the upper atmosphere using ground-based equipment as well as balloons, rockets and satellites, propulsion and propeliants, telecommunications, geophysical studies of the Aretic, defence against atomic, chemical and biological weapons, studies of shock and blast, biosciences research and operational research. The Board also supports and organizes an extramural program of research in the universities and industry. Some 200 grants are awarded annually to Canadian university staff members for research on problems of defence interest and a special fund is used to place contracts with idustry for research in selected fields.

Research on maritime warfare problems, particulary those relating to submarine detection and tracking, is carried out at the Naval Research Establishment, Dartmouth, N.S., and at the Pacific Naval Laboratory, Esquimalt, B.C. Research and development of weapons and defence against various weapons is undertaken in co-operation with the Armed Services at several establishments, the largest of which is the Canadian Armament Research and Development Establishment near Valcartier, Que. Its principal activities
include studies of defence against missiles, studies of the properties and application of infrared and other detection devices, exploration of the upper atmosphere with balloons and rockets, and the development of rocket propellants.

The Defence Research Telecommunications Establishment in Ottawa is concerned mainly with problems of communications which involve exploration of the ionosphere with ground-based equipment, with rockets and with satellites, and the applications of the science of electronics to military problems. Research on the defensive aspects of chemical, biological and atomic weapons is carried out at two Defence Research Board establishments -the Defence Chemical, Biological and Radiation Laboratories at Ottawa, Ont., and the Suffield Experimental Station at Ralston, Alta.

The Defence Research Medical Laboratories near Toronto are concerned with biogciences research, chiefly with raising the operating efficiency of man working in the military environment, and includes such subjects as human physiology, experimental psychology and research on clothing.

Operational research is carried on by an integrated headquarters group which conducts long-range scientific analysis of future defence problems. The staff consists of operational research scientists provided by the Board and service officers. The Board also provides operational research scientists as members of teams in the various Service Commands.

Thus, the Board continues to support the fields of research that are of foremost interest to the Canadian Armed Services and the program is under continuing review to ensure that cognizance is taken of all changes in emphasis in defence requirements. Close liaison is maintained between the Defence Research Board and the Department of Defence Production to ensure that research and development activities are closely integrated with production.

## PART II.-DEFENCE PRODUCTION*

Under the provisions of the Defence Production Act (RSC 1952, c. 62, as amended), the Department of Defence Production has exclusive authority to procure the goods and services required by the Department of National Defence and the responsibility to ensure that the necessary productive capacity, capability and materials are available to support the defence production program. The latter responsibility includes defence development and production-sharing with the United States, defence production export activities with NATO and other friendly countries, and co-operation in research, development and production prograns within the NATO alliance. The Department also provides management and staff for the Canadian Commercial Corporation, a Crown company primarily responsible for the contracting in Canada for defence goods purchased by other governments and for contracting for supplies to meet Canadian requirements under External Aid Programs and other international agreements. The Department is responsible for planning and making other necessary arrangements for the immediate establishment of a war supplies agency, should there be a nuclear attack.

Implementing recommendations of the Royal Commission on Government Organization, the Government assigned to the Department of Defence Production the responsibility for forming a central purchasing and supply agency. The plan of organization for a future Department of Supply prepared by the Department requires the integration of the purchasing organization of Defence Production with supply functions. These supply functions were grouped with the regional purchasing function of Defence Production and Crown Assets Disposal Corporation to form the Canadian Government Supply Service.

[^391]Procurement and construction contracts issued by the Department of Defence Production and Defence Construction (1951) Limited* had a net value of $\mathbf{\$ 7 1 3 , 4 1 5 , 0 0 0}$ in 1965 and $\$ 452,530,000$ in the first half of 1966. (The net value of contracts is made up of the value of new contracts issued as well as amendments that increased or decreased existing contracts.) The net value of contracts in 1965 according to the various sources for which they were issued was as follows:-

| Source | Net Value | P.C. of Totol Value |
| :---: | :---: | :---: |
|  | \$ |  |
| Department of National Defence... ${ }_{\text {Department of }}$ Defence Production ( D Potes) | 473,534,358 | 66.38 |
| Foreign Govermments- | 1,462,662 | 0.21 |
| United States. | 154,384,358 | 21.64 |
| Britain | 1,843,278 | 0.26 |
| Other, ........ | 5,929,910 | 0.88 |
| Canadian Sourcea other than DND and DDP- | 5,0,10 | 0.8 |
| External Aid. | 19,650,299 | 2.75 |
| Other Government Departments.. | 56,609,793 | 7.93 |
| Torals. | 713,414,658 | 100.06 |

The $\$ 473,534,000$ in contracts placed on behalf of the Department of National Defence in 1965 was 4.8 p.c. below the value in 1964 . There was an increase of $\$ 14,358,000$ in the shipbuilding program, one of $\$ 6,531,000$ in the armament program and one of $\$ 6,062,000$ in the electronics and communication equipment program. On the other hand there was a decrease of $\$ 15,891,000$ in the aircraft program and one of $\$ 10,124,000$ in the tankautomotive program.

Contracts placed outside Canada on behalf of the Department of National Defence in 1965 amounted to $\$ 82,543,000$, which was 17 p.c. of the total net value of prime contracts issued. Contracts valued at $\$ 47,856,000$ were placed in the United States, $\$ 26,509,000$ in Britain and $\$ 8,177,000$ in other countries. Expenditure on contracts placed in 1965 was $\$ 462,732,000$, an amount 15.3 p.c. lower than in 1964. Expenditure against aireraft programs decreased by $\$ 32,301,000$ or 16.9 p.c.; for electronics and communication equipment by $\$ 12,477,000$ or 11.0 p.c. and for tank-automotive by $\$ 10,423,000$ or 40.8 p.c.

Of the $\$ 452,530,000$ in contracts issued during the first half of $1966, \$ 298,264,000$ or 66 p.c. was for the Department of National Defence and expenditures against prime contracts placed for that Department stood at $\$ 262,005,000$. The Department of Defence Production placed $\$ 1,463,000$ in contracts in 1965 and $\$ 1,641,000$ in the first half of 1966 against certain appropriations to assist Canadian defence industries. Revolving Fund contracts amounted to $\$ 16,288,000$ in 1965 and $\$ 21,047,000$ in the first half of 1966 .

Contracte placed for all sources other than the Departments of National Defence and Defence Production totalled $\$ 238,418,000$ in 1965 , of which $\$ 154,384,000$ was for the United States Government; $\$ 56,610,000$ for Canadian non-defence Government departments and agencies and $\$ 19,650,000$ for External Aid programs. For the first six months of 1966 , contracts placed for the United States Government amounted to $\$ 81,708,000$, for Canadian non-defence Government departments and agencies, $\$ 39,000,000$; and for External Aid programs, $\$ 21,000,000$.

Defence Production and Development Sharing.-In 1965, $\$ 259,500,000$ worth of United States defence production-sharing contracts were placed with Canadian industry, an increase of 55 p.c. over 1964. The higher level in 1965 was accounted for by increased levels of incremental funding on the United States share of the joint Canada/United States F-104G MAP aircraft program and increased United States procurement in areas such as aircraft engine and airframe spares, aircraft components, vehicle components, electronic navigation equipment and communication equipment. The total United States defence production-sharing procurement in Canada during the seven years of the program was $\$ 1,174,200,000$.

[^392]Prime contracts placed by the United States Government with the Canadian Commercial Corporation increased from 1,561 in 1964, to 1,707 in 1965, the latter having a total value of $\$ 146,500,000$. Subcontracts received directly by Canadian firms increased from 2,445 to 2,895 and were valued at $\$ 109,800,000$. Other prime contracts received directly from the United States Government by Canadian industry and other institutions had a value of $\$ 3,221,505$.

In 1965, continued assistance was given to Canadian industry under the developmentsharing program for research and development projects of interest to the United States Services; 56 development-sharing contracts were in effect with expenditure totalling $\$ 22,000,000$.

Co-operation in NATO and RDP (Research, Development and Production) and Exports Overseas.-Canadian industry is encouraged to participate in supplying the defence needs of European and other countries in such areas as aircraft, training and navigational aids and engine spares. During 1965, 80 Canadian firms reported the receipt of $\$ 67,736,000$ in prime contracts and subcontracts from 43 NATO and other countries (excluding the United States), although over 95 p.c. of this business came from some 14 countries. Of this total, which was an increase of 11 p.c. over 1964, prime contracts accounted for $\$ 46,076,000$ and subcontracts placed in Canada by overseas countries, for $\$ 21,660,000$. The major purchases in this group were for Caribou, Otter and Twin Otter aircraft, F -104G simulator spares, rocket launchers and nosecap assemblies for the NATO M-72 light antitank weapon program, navigational equipment for the F-104G aircraft, position and homing indicators, spares for vehicles, aircraft engines and spares, MK44 torpedoes and spares, and a contribution to the shared development of the CL-89 surveillance drone.

During 1965, Canadian defence contracts placed in overseas countries on behalf of the Canadian Armed Services amounted to $\$ 51,011,000$, consisting of $\$ 31,259,000$ in prime contracts and $\$ 19,752,000$ in sub-contracts, so that Canada benefited from this exchange of defence contracting by $\$ 16,725,000$.

## PART III.-CIVIL EMERGENGY PLANNING (CIVIL DEFENCE)

The present arrangements for civil emergency planning in Canada took form in 1958 following an analysis by the Canadian Government of the kind of military and civilian arrangements necessary to prepare the nation for the possibility of nuclear war. This review led to a major re-arrangement of federal civil defence functions, together with an offer from the Federal Government to assume certain responsibilities previously borne by provinces and municipalities. The reorganization, which became effective on Sept. 1, 1959, was based on the principles that: (1) civil defence was properly a function or activity of government rather than a separate organization as such, and (2) this function should be divided into clearly defined tasks assigned to the appropriate levels of government, and at each governmental level made the responsibility of those departmenta or agencies best able to undertake and discharge them.

The Canada Emergency Measures Organization is the federal co-ordinating agency for all civil emergency planning. The Civil Emergency Measures Planning Order (Order in Council PC 1965-1041) dated June 8, 1965, defines the functions of the Canada Emergency Measures Organization, designates it as a department for administrative purposes and places it under the control and supervision of the Minister of Industry. Its functions include:-
(1) the development of policies and a program to ensure the continuity of government in an emergency;
(2) the co-ordination of civil emergency planning and training within the Federal Government;
(3) in conjunction with provincial authorities, the development of policies and a program for the control of civil road transport resources;
(4) the provision of assistance and guidance to provincial government and municipalities in respect of the preparstion of civil emergeney measures in matters that are not the responsibility of a department of the Federal Government;
(5) the provision of general liaison with other countries and with NATO on matters relating to civil emergency measures; and
(6) the responsibility for the direction and administration of the Canadian Emergency Measures College at Arnprior, Ont.

The Civil Emergency Measures Planning Order also defines the civil emergency powers, duties and functions of the Ministers of federal departments and agencies having immediate responsibilities in the event of a war emergency. Included in this category are the $\mathrm{De}_{e}$ partments of Agriculture, Defence Production, External Affairs, Finance, Fisheries, Justice, Labour, National Defence, National Health and Welfare, Post Office, Public Works, Transport, the Bank of Canada, Cansdian Broadcasting Corporation, Central Mortgage and Housing Corporation and the Royal Canadian Mounted Police. In view of the Government Organization Act, 1966, it is anticipated the Department of Manpower and Immigration and the Department of the Solicitor General also will be included in this category.

Certain emergency functions of government are a projection of normal provincial peacetime responsibility. The following represent responsibilities of this kind, and are the concern of provincial authorities with such federal assistance as may be necessary:-
(1) preservation of law and order and the prevention of panic by the use of provincial and municipal police and special constables, with whatever support is necessary and feasible from the Royal Canadian Mounted Police and the Armed Services at provincial request;
(2) control of road traffic, except in areas damaged or covered by heavy fallout, including special measures to assist in the emergeney movement of people from areas likely to be attacked or affected by heavy fallout;
(3) reception services, including arrangements for providing accommodation, emergency feeding and other emergency supplies and welfare services for people who have lost or left their homes or who require assistance because of the breakdown of normal facilities;
(4) organization and control of medical services, hospitals and public health measures;
(5) maintenance, clearance and repair of highways;
(6) organization of municipal and other services for the maintenance and repair of water and sewerage systems; and
(7) organization of municipal and other fire fighting services, and control over and direction of these services in wartime, except in damaged or heavy fallout areas, where fire fighting services would be under the direction of the Army as part of the re-entry operation.

# CHAPTER XXVII.-OFFICIAL SOURCES OF INFORMATION AND MISCELLANEOUS DATA 

| CONSPECTUS |  |  |
| :---: | :---: | :---: |
| Page |  | Page |
| Part I.-Official Sources of Information. . 1185 | Part It.-Special Material Publisbed in |  |
| Section 1. Books About Canada........ 1185 | Former Editions of the Canada Year |  |
| Section 2. Federal Government Information Serviceb......... .... 1201 | Book..... Part III.-Reglister of Official Appoint- | 1236 |
| Section 3. Sale of Offictal Peblications 1202 | ments....... Part IV. | 1240 |
| Directory of Sodrces of Offictal Infor- | Part IV.-Federal Legislation, 1960-67. | 1247 |
| mation... .. .... 1204 | Part V.-Canadian Chronology. | 1254 |

## PART I.-OFFIGIAL SOURCES OF INFORMATION

## Section 1.-Books About Canada

This basic list of books about Canada, contributed by the National Library (February 1967), includes a selection of publications grouped alphabetically by author and arranged under the subject classifications of Biography; Country and People, Economics, External Relations, Government and Politics, History, Literature and the Arts, and General Reference Works. The selection represents many aspects of Canadian life, emphasizes the latest editions of books published within the past ten years, and includes titles issued in either or both English and French, accompanied by the publisher's address.

It should be noted that, although this list is now an annual feature of the Year Book, it is not a cumulative presentation; it is limited to about 480 titles, necessitating the omission of some items that appeared the preceding year to permit the inclusion of others. For additional titles, the reader should consult the lists of books in earlier Year Books or one or more of the bibliographical collections listed below under the heading "General Reference Works", particularly the monthly or annual editions of Canadiana published by the National Library.

[^393]Brown, Florence M. Breaking barriers; Eric Brown and the National Gallery. Ottawa, Society for Art Publications, 1964. 113 p.
Campalli, Marjorie Wilkins. McGillivray, Lord of the Northwest. Toronto, Clarke, Irwin, 1962. 337 p.
Campbell, Marjorie Wilkins. No compromise; the story of Colonel Baker and the CNIB. Toronto, McClelland and Stewart, 1965. 217 p.
Canadian writers. Ecrivains canadiens. A biographical dictionary edited by-un dictionnaire biographique rédigé par Guy Sylvestre, Brandon Conron, C. F. Klinek. New ed. rev, and enl. Nouv, éd. rev, et augm. Toronto, Ryerson Press, 1966. 186 p . (Articles by French language authors are in French.)
Carr, Emily. Hundreds and thousands; the journals of Emily Carr. Toronto, Clarke, Irwin, 1966. 332 p.
Cowan, John. Canada's Governors-General, Lord Monck to General Vanier. Centennial ed. Toronto, York Pub. Co., 1965. 260 p.
Cheighton, Donald. John A. Macdonald. Toronto, Macmillan, 1952-55. 2 v .
Dawson, R. M. William Lyon Mackenzie King; a political biography. Vol. 1, 1874-1923. Vol, 2, 1923-1932 by H. Blair Neatby. Toronto. University of Toronto Press, 1958-63. 2 y .
Dictionary of Canadian biography. General editor, G. W. Brown. Directeur adjoint, Marcel Truder. Vol. 1. 1000 to 1700. Toronto, University oi Toronto Press, 1965. (To be complete in 24 v .)
Dictionnaire biographique du Canada. General editor, G. W. Brown. Directeur adjoint. Marcel Trudel. T. 1. 1000 ^1700. Québee, Presses de l'Université Laval, 1966. (L'ouvrage entier doit comprendre 24 v .)
Drury, E. C. Farmer premier; memoirs of the Honourable E. C. Drury. Toronto, McClelland and Stewart, 1966. 198 p.
Falmagne, Tbérèse. Un marguis du grand siècle, Jacques-Rene de Brisay de Denonville, gouverneur de la Nouvelle-France 1637-1710. Montréal, Editions Leméac, 1965.341 p.
Gagnon, M. A. Le ciel et l'enfer d'Arthur Ruies. Québec, Presses de l'Université Laval, 1965. 360 p . (Vie des lettres canadiennes, 2)
Gilbert, Heather M. Awakening continent; the life of Lord Mount Stephen. Vol. 1. 1829-91. Aberdeen, Aberdeen University Press, 1965. 314 p. (Vol. 2 will not be completed until the private papers of J. J. Hill are made available in 1981 .)
Grabam, Roger. Arthur Meighen; a biography. Toronto, Clarke, Irwin, 1960-65. 3 v .
Gray, J. M. Lord Selkirk of Red River. Toronto, Macmillan, 1963. 388 p.
Great Canadians; a century of achievement. Selected by Vincent Massey and others. Illustrated by Franklin Arbuckle. Toronto, Canadian Centennial Pub. Co., 1965. 122 p. (The Canadian centennial library)
Grenon. Hector. Chroniques oscues; des modestes origines d'une élile urbaine. T. 1. Montreal, Editions de l'Homme, 1966. 494 p.
Inms, Mary Quayle, ed. The clear spirit; twenty Canadian women and their times. Toronto, University of Toronto Press, 1966. 304 p . (Includes two chapters in French)
Lamontagne, Roland. La Galissonière et le Canada. Montréal, Presses de I'Universite de Montréal, 1962. 104 p .
La Roque de Roquebrune, Robert. Quartier Saint-Louis; récii par Robert de Roquebrune pseud. Montréal, Fides, 1966. 199 p. (Collection du nénuphar, 30) (Suite de Testament de mon enfance)
Luchkonce, Michael. A Ukrainian Canadian in Parliament; memoirs of Michael Luchkovich. Toronto, Ukrainian Canadian Research Foundation, 1965. 128 p. (Ukrainian Canadian Research Foundation. The Canadian centennial series, 2)
MacGregor, J. G. Peter Fider: Canada's forgotten surveyor, 1769-182s. Toronto, McClelland and Stewart, 1966. 265 p.
Mackenzie, Sir Alexander. First man west; Alexander Mackenzie's journal of his noyage to the Pacific Coast of Canda in 179s. Edited by Walter Sieppe. Montreal, McGiil University Press, 1963. 366 p .

Massey, Viecent. What's past is prologue; memoirs. Toronto, Macmillan, 1963. 840 p .
Noligak. I, Nuligak. Translated from the Eskimo by Maurice Metaver. Illus. by Eifootar. Toronto, P. Martin Associates, 1966. 208 p.
Our living tradition. First to fifth series. Toronto, University of Toronto Press, 1957-65. 5 v. in 4. (Public lectures given at Carleton University on prominent Canadians)
Pope, Sir Joseph. Public servant; the memoirs of Sir Joseph Pope. Edited and completed by Maurice Pope. Toronto, Osford University Press, 1960. 312 p.
Pope, Maurice. Soldiers and politicians; memoirs. Toronto, University of Toronto Press, 1962. 462 p.

Power, C. G. A party politician; the memoirs of Chubby Power, Edited by Norman Ward. Toronto, Macmillan, 1966. 419 p .
Rlefy, Very Rev. C. E. Derwyn Trevor Owen, Primate of All Canada. Toronto, Ryerson Press, 1966. 175 p .

Schull, J. J. Laurier; the first Canadian. Toronto, Macmillan, 1965. 658 p.
Sherman, Patrick, Bennett by Paddy Sherman. Toronto, McClelland and Stewart, 1968. 316 p.
Shrive, F N. Charles Mair; literary nationalist. Toronto, University of Toronto Press, 1965. 309 p.
Simcos, Elizabeth P. Diary. Edited by Mary Quayle Innis. With illus. from the original ms. Toronto, Macmillan, 1965. 223 p.
Stsons, C. B. Nil alienum; the memoirs of C. B. Sissons. Toronto, University of Toronto Press, 1964. 260 p .

Skriton, O. D. Life and times of Sir Alexander Tilloch Galt. Edited and with an introd. by Guy Maclean. Toronto, McClelland and Stewart, 1966. 293 p . (The Carleton library, no. 26)
Skelton, O. D. Life and letters of Sir Wilfrid Laurier. Ed. by D. M. L. Farr. (Abridged ed.) Toronto, McClelland and Stewart, 1965. 2 v . (Carleton library, no. 21-22)
Stanley, G. F. G. Louis Riel. Toronto, Ryerson Press, 1963. 433 p.
Stafansson, Vilhjalmur. Discovery; the autobiography of Vilhjalmur Stefansson. New York, McGraw-Hill, 1964. 411 p.
Tromson, D. C. Alexander Mackenzie, clear Grit. Toronto, Macmillan, 1960. 436 p.
Walcace, Elizabeth. Goldwin Smith, Victorian liberal. Toronto, University of Toronto Press, 1957. 297 p .

Wallace, W. S., ed. The Macmillan dictionary of Canadian biography. 3d ed. Toronto, Macmillan, 1963. 822 p .

Watkins, Emest. R. B. Bennett, a biography. Toronto, Kingewood House, 1963. 271 p.
Who's who in Canadian Jewry, 1965. Compiled by the Canadian Jewish Literary Foundation. Montreal, Jewish Institute of Higher Research, Central Rabbinical Seminary of Canada, 1965. 525 p .

Worthngton, Larry, "Worthy"; a biagraphy of Major-General F. F Worthington, C.B., M.C., M.M. Toronto, Macmillan, 1961. 236 p.

## Country and People

abrabamgon, Una. God bless our home; domestic life in nineteenth century Canada. Toronto, Burns and MacEachern, 1966. 233 p .
Angrrs, Pierre. Problèmes de culture au Canada frangais. Montréal, Beauchemin, 1960. 117 p .
Areenault, Bona. Histoire et généalogie des Acadiens. Québec, Conseil de la vie franģaise en Amérique, 1965. 2 v .
Araenacle, Bona. History of the Acadians. Québec, Conseil de la vie française en Amérique, 1966. 265 p . (Translation and revision of the historical part of Histoire et généalogie des Acadiens)
Belgin, Simon. Through narrotv gates; a review of Jewish immigration, colonization and immigrant aid work in Canada (1840-1940). Montreal, Canadian Jewish Congress and the Jewish Colonization Association, 1966. 235 p .
Blohen, B. R., ed. Canadian society, sociological perspectives. Toronto, Macmillan, 1961. 622 p.
Boulizon, Guy, et Adams, Geoffrey. Canada, 20eme sieccle-zoth century. Texte français de Guy Boulizon. English text by Geoffrey Adams. Paris, Éditions de la Pensée moderne; Montréal, Beauchemin, 1964. I v.
Brunetr, Michel. Canadians et Canadiens; études sur l’histoire et la pensée des deux Canudas. Montréal, Fides, 1960.175 p . (Bibliothèque économique et sociale)
Canada. Department of Forestry. Native trees of Canada. 6th ed. Ottawa, Queen's Printer, 1961. 291 p .

Canada. Ministère des Forêts. Arbres indigènes du Canada. 3e ed. Ottawa, Imprimeur de la Reine, 1961. 289 p.
Carver, H, S. M. Cities in the suburbs. Toronto, University of Toronto Press, 1962. 120 p.
Casical, J. G. The civil law system of the Province of Quebec. Toronto, Butterworth, 1961. 613 p .
Chapdt-Rolland, Solange. Mon pays, Québec oule Canadaq Montréal, Cercle du Livre de France, 1965. 181 p .

Chaput-Rolland, Solange. My counlry, Canada or Quebeci Toronto, Macmillan, 1966, 118 p.
Clark, S. D. The suburban sociely. Toronto, U'niversity of Toronto Press, 1966. 233 p .
Commission on the Financing of Higher Education. Financing higher education in Canada; being the report of a Commission to the Association of Universities and Colleges of Canada. Toronto, University of Toronto Press, 1965. 98 p.

Commission sur le financement de l'enseignement supérieur au Canada. Le fnancement de l'enseignement superieur au Canada; rapport d'une commission d'enquête al l'Association des Universités et Colleges du Canada. Quebec, Presses de l'Université Laval, 1965. 112 p.
Desbabats, P. H. The state of Quebec; a journaliet's view of the quiet revolution. Toronto, McClelland and Stewart, 1965.188 p.
de Volpi, C. P. The Niagara Peninsula; a pictorial record. Montreal, Dev-Sco Publications, 126B, 259 p. (Distributed by Longmans, Canada)
de Voler, C. P., comp. Toronto, a pictorial record; historical prints and illustrations of the City of Toronto 181s-1882. Montreal, Dev-Sco Publications, 1965. 259 p.
Droler, Antonio. Les bibliothèques canadiennes, 1604 - 1960 . Montréal, Cercle du livre de France,
1965 . 234 p. 1965. 234 p.

Egeleston, Wilirid. Canada's nuclear story. Toronto, Clarke, Irwin, 1965. 368 p.
Elisin, Frederick. The family in Canada; an account of present knowledge and gaps in knowledge about Canadian families. Ottawa, Canadian Conference on the Family, 1964. 192 p.
Elxin, Frederick. La jamille au Canada; données, recherches et lacunes du savoir sur les familles au Canada. Ottawa, Congres canadien de la famille, 1964. 208 p.
Ellis, F. H. Canada's Aying heritage. 2d ed. Toronto, University of Toronto Press, 1961. 398 p.
Falardeau, J. C. Roots and values in Canadian lives. Toronto, Univezsity of Toronto Press, 1961. 62 p. (Alan B. Plaunt memorial lectures)
Garigue, Philippe. L'option politique du Canada frangais; une interpretation de la survicance.nationale. Montréal, Editions du Lévrier, 1963. 174 p.
Gluer, Margaret. A history of education: thought and practice. Toronto, MeGraw-Hill, 1966. 443 p .
Godprey, W. E. The birds of Canada. Colour illus. by J. A. Crobsy, line drawings by S." D. Macdonald. Ottawa, Queen's Printer, 1966. 428 p. (National Museum of Canada. Bull. no. 203. Bull. ser. no. 73)
Guillet, E. C. The story of Canadian roads. Toronto, University of Toronto Press, 1966. 246 p .
Harris, R. S., ed. Changing patlerns of higher education. Toronto, University of Toronto Press, 1966. 106 p.

Harvey, J. C. Visages du Québec. Photos de Marcel Cognac. Montréal, Cercle du livre de France, 1965. 202 p.
Harvey, J, C. The many faces of Quebec. Translated by Alta Lind Cook. Photos by Marcel Cognac. Toroato, Macmillan, 1966. 202 p.
Holr, Simma. Terror in the name of God; the story of the Sons of Freedom Doukhobors. Toronto, McClelland and Stewart, 1964. 312 p .
Honigmann, J. J., and Honigmann, Irma. Eskimo townsmen. Ottawa, Canadian Research Centre for Anthropology, University of Ottawa, 1965. 278 p.
Iglader, Edith. The new people; the Eskimo"s journey into our time. Garden City, N. Y., Doubleday, 1966. 205 p. (About Canadian Eskimos)
Irving, J. A. Mass media in Canada. Toronto, Ryerson Press, 1962. 236 p.
Jenness, Diamond. The Indians of Canada. 5th ed. Ottawa, Queen's Printer, 1960. 452 p.
Jenness, Diamond. People of the twilight (Eskimos). Chicago, University of Chicago Press, 1959. 250 p. (Phoenix books)
Kemp, V. A. M. Scarlet and Stetson; the Royal North-West Mounted Police on the prairies. Toronto, Ryerson Press, 1964. 280 p.
Kristianson, Wilhelm. The Icelandic people in Manitoba. Winnipeg, Wallingford Press, 1965. 557 p -
Laportune, Francois. Où la lumiere chante. Photos: F. Lafortune. Textes: Gilles Vigniader. Québec, Presses de l'Université Laval, 196B. I v. en majeure part. ill. (La ville de Québec).
Lansdowne, J. F., and Livingston, J. A. Birds of the northern forest. Toronto, MoClellaid and Stewart, 1966. 247 p.
Lapierre, Laurier, ed. French-Canadian thinkers of the mineteenth and twentieth centuries. Montreal, McGill University Press, 1966. 117 p. (Four o'clock lectures, 1)
Laskin, R. J., ed. Social problems; a Canadian profile. Toronto, McGraw-Hill, 1964. 472 p.
McAllister, R. I. ed. Newfoundland and Labrador, the first fifteen years of Confederatios. St. John's, Dicks, 1966 . 247 p .
McGrath, W. T., ed. Crime and its treatment in Canada. Toronto, Macmillan, 1965. 510 p.
McLinn, E. D. The living past of Montreal. Le passe vivant de Montréal. Version trançaise de Paul Rovssex. Montreal, McGill University Press, 1964. 1 v . (unpaged) (tert bilingual)
Masters, D. C. C. Protestant church colleges in Canada; a history. Toronto, University of Toronto Press, 1966. 225 p. (Studies in the history of higher education in Canada, 4)
Morr, J. S., ed. The Cross in Canada. Toronto, Ryerson Press, 1966. 247 p.

Honthral. L'age d'or/The golden years. English text by Leonard L. Knotr. Texte français de Huguette Lavigutur. Photos by Armour Landry. Toronto, McClelland and Stewart, 1965. 192 p.
Monton, W. L. The Canadian identify. Toronto, University of Toronto Press, 1962. 125 p. (Camadian university paperbooks, 1)
National Conference on Canadian Slavs. Slave in Canada; proceedings. 1st; 1965. Edmonton, Inter-University Committee on Canadian Slavs, 1966. 171 p. biennial (Includes one paper in French)
Nexitg, L. H. Conquest of the last frontier. Don Mills, Ont., Longmans, 1966. 425 p. (History of Arctic exploration in the nimeteenth century)
Pariñ; J. H. Bell and Baldwin; their development of aerodromes at Baddeck, Nova Scotia. Toronto, University of Toronto Press, 1964. 555 p .
Pricival, W. P. The lure of Quebec. Rev. ed. Torouto, Ryerson Press, 1965. 217 p.
Perzrson, R. L. The mammals of eastern Canada. Toronto, Oxford University Press, 1966. 465 p.
Pomter, J. A. The vertical mosaic; an analysis of social class and power in Canada. Toronto, University of Toronto Press, 1965 . 626 p. (Studies in the structure of power; decision-making in Canada, 2)
Pormn, Berthe. La pie des Canadiens-français au dêbut du siècle. Montréal, Agence de distribution populaire, 1966. 126 p.
Putnam, D. F., ed. Canadian regions; a geography of Canada. 7th ed. Toronto, Dent, 1965. 601 p.
Quêbec (Ville) Université Laval. Faculté des sciences de l'éducation. L'education dans un Québec en enolution. Québec, Presses de l'Université Laval, 1966. 245 p . (Les Dossiers pédagogiques de Laval 1)
Quesec. Ministère des Affaires culturelles. Collection, art, die et sciences au Canada frangais, sous la direction de Geneviève de la Tour-Fondue-Smith. Québec, 1964. 6 v .
Recherches sociographiques. Colloque. 3 e, Québec, 1966. Le pouvoir dans la societé canadienneframpaise. Ouvrage realise sous la direction de Fernand Domont et Jean-Paul Montminy. Québec, Presses de l'Université Laval, 1966. 252 p .
Robrnierg, S. E., ed. A humane society. Toronto, University of Toronto Press, 1962. 167 p.
Rowr, F. W. The development of education in Netofoundland. Toronto, Ryerson Press, 1964. 225 p.
Rotal Society of Canada. Pioneers of Canadian science; symposium presented in 1964. Les pionniers de la science caradienne; collogue présenté en 1964: Edited by,G. F. G. Staniey. Toronto, University of Toronto Press, 1966. 146 p . (Its "Studia varia" series, 9 )
Rubsell, Franklin. The secret islands. Toronto, McClelland and Stewart, 1965. 238 p. (Description of islands off the eastern coast of Canada and Newfoundland)
Shci, B. G. History of the Jews in Canada. Rev. ed. Translated by Ralph Novek. Montreal, Harvest House, 1965. 299 p.
Sussons, C. B. Church and state in Canadian education; an historical study. Toronto, Ryerson Press, 1959. 414 p.

Surri, I. N., ed. The unbelievable land; 29 experts bring us closer to the Arctic. Ottawa, Queen's Printer, 1964. 140 p.
8rbacie, E. W. R. Science in Canada; selections from the speeches of E.W. R. Steacie. Edited by J. D. Babbitt. Toronto, University of Toronto Press, 1965.198 p.

Sylvestre, Guy, éd. Structures saciales du Canada français; études de membres de la Section I de la Socité royale du Canada. Québec, Presses de l'Université Laval; Toronto, University of Toronto Press, 1966. 120 p .
Thistle, M. W. The inner ring; the early history of the National Research Council of Canada. Toronto, University of Toronto Press, 1966. 435 p.
Thomgon, D. W. Men and meridians; the history of surveying and mapping in Canada. Ottawa, Queen's Printer, 1966. 344 p. (Issued by the Dept. of Energy, Mines and Resources)
Taornton, Mildred V. Indian lives and legends. Vancouver, Mitchell Press, 1966. 301 p. (On the Indians of British Columbia)
Todp, W. E. C. Birds of the Labrador Peninsula and adjacent areas. Toronto, University of Toronto Press, 1963. 819 p .
$V_{\text {Açon, André. Histoire du notariat canadien, 1681-1960. Ed. rev. Québec, Presses de l'Uni- }}^{\text {. }}$ versité Laval, 1962. 209 p .
$V_{\text {an }}$ Dre AA, Hans. Montreal. Texte francais par Robert Chogumite. English text by Leslie Roberts. Montréal, Editions Leméac, 1965. 1 v . (non paginé)
$V_{\text {abley, Peter. Canada. Toronto, Macmillan, 1964. }} 57$ p. 184 plates (part col.)
Varliy Peter. Le Canada. Traduction de Pierre Trsseyre. Londres, Thames and Hudson; Montreal, Cercle du Livre de France, 1965. 57 p. 178 photogr., 8 bors-texte en coul.
Whson, D. J. The Church grows in Canada. Toronto, Ryerson Press, 1966. 224 p.

## Economics

Artien, H. G. J. American capital and Canodian resources. Cambridge, Harvard University Press, 1961. 217 p.
Allan, J. R. The income tax burden on Canadian stockholders. Toronto, Canadian Tax Foundation, 1966. 173 p . (Queen's University. Papers on taxation and public finance, no. 2)

Anderson, W. J. Canadian wheat in relation to the world's food production and distrithution. Sasketoon, Modern Press, 1964. 100 p.
Abeley, C. A., and Smals, R. G. H. Canadian crown corporations; some aopects of their adminiadration and control. Toronto, Macmillan, 1965. 360 p .
Ashley, C. A. The first twenty-five years; a study of Trang-Canada Air Lines. Toronto, Macmillan, 1963. 72 p.

Brllan, R. C. Principles of economics and the Canadian economy. Toronto, MeGraw-Hill, 1980,
540 , 540 p.
Blair, C. L. Canada's natural wealth. Toronto, MeGraw-Hill, 1964. 160 p.
Borie, Thomas. Justice through power; a study of labour in its present situation. Toronto, Longmans, 1961. 248 p .

Brewis, T. H., et al. Caradian economic policy. Rev. ed. Toronto, Macmillan, 1965. 463 p. (Statistical appendix by J. E. Gander)
Broullette, Benott. Les industries manufacturières du Canada. Rééd. mise jour et augm. Montréal, Ecole des hautes études commerciales, 1965. 181 p. (Montréal. Ecole des hautes études commerciales. Institut d'économie appliquêe. Etude $\mathrm{n}^{\circ} 10$ )
Cairns, J. P.iand Binfammrr, H., eds. Canadian banking \& monetary policy, recent readings. Toronto, McGraw-Hill, 1965.' 377 p .
Camu, Pierre, Weeks, E. P., and Sametz. Z. W. Economic geography of Canada. Toronto, Macmillan, 1964. 393 p .
Canada. Department of Agriculture. Co-operatives in Canada. Ottawa, Queen's Printer, 1962. 31 p. (Publication 1119)
Canada. Ministère du Travail. Direction de l'économique et de la recherche. Conditiona de vie et de travail au Canada. Ottawa, Imprimeur de la Reine, 1962. 78 p.
Carrothers, A. W. R. Collective bargaining laty in Canada. Toronto, Butterworths, 1965. 553 p.
Congrès des relations industrielles de l'Université Laval. 20e, Québec, 1965. Le cade du travail du QuÉbec (1965). Québec, Presses de l'Université Laval, 1965. 271 p.
Crysdale, R. C. S. The industrial strugole ond Protestant ethics in Canada. Toronto, Ryerson Press, 1961. 193 p .

Curris, A. W. Canadian economic development from the French regime to the present-day Canade of ten provinces. 4th ed. Toronto, Nelson, 1963. 470 p.
Denison, Merrill. Canada's first bank; a history of the Bank of Montreal. v. 1. Toronto, McClelland and Stewart, 1966. 471 p.
Dentson, Merrill. La première banque du Canada; hietoire de la Ranque de Montréal. v. 1. Trad. de l'anglais par Paul A. Horguelin Toronto, MeClelland and Stewart, 1966. 471 p.
Denison, Merrill. The people's power; the history of Ontario Hydro. Toronto, McClelland and Stewart, 1960. 295 p.
Dhalla. N. K. These Canadians; a sourcebook of marketing and socio-economic facts. Toronton McGraw-Hill, 1966. 749 p.
Due, J. F. The intercity electric railway industry in Canada. Toronto, University of Toronto Press, 1966. 118 p . (Canadian studies in economics, 18)

Firestone, O. J. Broadcast advertising in Canada; past and future growth. Ottawa, University of Ottawa Press, 1966. 358 p. (Soeial science studies, no. 3) (Includes some tert in French)
Fullerton, D. H. The bond market in Canada; a study of the institutiona, machinery, techniques and problems involved in the issuing and marketing of bonds and debentures. Toronto, Carswell, 1962. 379 p.
Galarnead. Claude, et Lavore, Elzebr, eds. France et Canada francais du XVIe au XXe siede. Québee. Presses de l'Université Laval, 1966. 322 p. (Cahiers de l'Institut d'histoire, 7)
Galbratri, J. A. The economics of banking operations; a Canadian study. Montreal, McGill University Press, 1963. 510 p .
Glazebroor, G. P. de T. A history of transportation in Canada. New ed. Toronto, McClelland and Stewart, 1964. 2 v .
Hall, L. G., and Spurr, G. H. The elements of insured pension plans in Canada. 2d ed. Don Mills, Ont. Institute of Chartered Life Underwriters of Canada, 1965. 112, 103 p .
Hall L. G., et Spurr, G. H. Les éléments des régimes de pension azsurés au Canada. $2 e$ éd. Dou Mills, Ont. Institut des assureurs-vie agrées du Canada, 1965. 121, 63 p.

Innis, H. A. Essays in Canada's economic history. Edited by Mary Q. Innis. Toronto, University of Toronto Press, 1962. 418 p. (Canadian university paperbooks, 6)
Jonnson, H. G. The Canadian quandary; economic problems and policies. Toronto, McGraw-Hill, 1963. 352 p .

Lxighton, D. S. R., and Thain, Donald H. Canadian problems in marketing. 2e ed. Toronto, MeGraw-Hill, 1965. 811 p.
Leonard, W. G. Financial management in Canadian business. Toronto, MeGraw-Hill, 1965. 235 p .
Livingston, K. C., and Graham, T. C., eds. Manufacturing processes in Canada. Toronto, University of Toronto Press, 1960. 304 p .
Mackintosh, W. A. The economic background of Dominion-provincial relations; Appendix UI of the Royal Commission report on Dominion-provincial relations. Toronto, MeClelland and Stewart, 1964. 191 p. (Carleton library. no. 13)

Marion, Gérald. Repartition fonctionnelle des revenus; analyse de la part du travail au Canada. Montréal, Presses de l'Université de Montréal, 1965. 125 p.
Neupeld, E. P., ed. Money and banking in Canada; historical documents and commentary. Toronto, McClelland and Stewart, 1964. 369 p . (Carleton library no. 17)
Ouellet, Fernand. Histoire Economique et sociale du Quêbec 1760-1850; structures et conjoncture. Montréal, Fides, 1966. 639 p . (Histoire économique et sociale du Canada français)
Perrchinis, S. G. The economics of labour; 1925-employment and wages in Canada. Toronto, McGraw-Hill, 1965. 412 p.
Pıornick, A. R. Petroleum; Canadian markets and United States foreign trade policy. Seattle, University of Washington Press, 1964. 172 p.
Porter, C. C. Finance and business administration in Canada. Scarborough, Ont., Prentice-Hall, 1966. 578 p.

Private Planning Association of Cansda. Canadian Trade Committee. Canadian economic policy since the war; a series of six public lectures in commemoration of the twentieth anniversary of the white paper on employment and income of 1945. Montreal, 1966.154 p.
Pugeley, W. H. Canadian business organization and management. Toronto, McGraw-Hill, 1965. 547 p.
Rich, E. E. Montreal and the fur trade. Montreal, McGill University Press, 1966. 99 p. (Beatty memorial lectures, 1963-64)
Rosenbluth, G., and Thorburn, H. G. Canadian anti-combines administration, 1959-60. Totonto, University of Toronto Press, 1963. 106 p .
Rian, William F., s.j. The clergy and economic growth in Quebec (1896-1914). Québec, Presses de l'Université Laval, 1966. 348 p .
Saskatchewan Wheat Pool. The Saskatchewan Wheat Pool and its accomplishments. Regina, 1964. 40 p.
Sauriol, Paul. La nationalisation de l'électricité. Montréal, Editions de l'Homme, 1962. 120 p .
Sauriol, Paul. The nationalization of electric poteer. Montreal, Harvest House, 1962. 95 p. (French Canadian Renaissance, v. 3)
Stevens, G. R. Canadian National Railways. Toronto, Clarke, Irwin, 1960-62. 2 v.
Toronto University. Centre for Industrial Relations. Industrial relations: challenges and responses, edited by J. H. G. Grispo. Toronto, University of Toronto Press, 1966. 156 p.
Tucker, G. N. The Caradian commercial revolution, 1845-1851. Edited by H. G. J. Artien. Toronto, McClelland and Stewart, 1964. 186 p . (Carleton library, no. 19)
Uren, P. E., ed. East-West trade; a symposium. Introd. by Mitchell W. Sharp. Toronto, Canadian Institute of International Affairs, 1966. 181 p. (Contemporary affairs, no. 36)
Wilgon, G. W., Gordon, Scott, and Judek, Stanislaw. Canada: an appraisal of its needs and resources. Avec un commentaire par A. Bremon. New York, Twentieth Century Fund; Toronto, University of Toronto Press, 1965. 453 p .
Wonnacort, G. P. The Canadian dollar, 1948-1958. Rev. ed. Toronto, University of Toronto Press, 1965. 339 p .
Wood, W. D., and Thoman, R. S., eds. Areas of economic stress in Canada. Proceedings of a Conference, Queen's University, at Kingston, Ontario. Kingston, Industrial Relations Centre, Queen's University, 1965. 221 p.
Woods, H. D., and Ostry, Sylvia. Labour policy and labour economics in Canada. Toronto, Macmillan, 1962. 534 p .

## External Relations

Banff Conference on World Development. 3d, Banff, Alta., 1965. Canada's role as a middle power. Edited by J. K. Gorbon. Toronto, Canadian Institute of International Affairs, 1966. 212 p. (Contemporary affairs, no. 35)

Brmbner, J. B. North Atlantic trianole; the interplay of Canada, the United States and Great Britain. Toronto, MeClelland and Stewart, 1966. 377 p . (The Carleton library, no. 30)
Brown, R. C. Canada's national policy, 188s-1900; a study in Canadian-American relations. Princeton, Princeton University Press, 1964. 436 p.
Cadieux, Marcel. The Canadian diplomat; an essay in definition. Trans. by Archibald Day. Toronto, University of Toronto Press, 1963.113 p.
Cadrevx, Marcel. Le diplomate canadien-eléments d'une défnition. Montréal, Fides, 1962. 127 p.
Canada. Department of External Affairs. Canada and the United Nations. Ottawa, Queen's Printer. Annual.
Canada. Mjnistère des Affaires extérieures. Le Canada et les Nations uries. Ottawa, Imprimeur de la Rejne. Annuel.
Canada in world affairs. Toronto, Oxford University Press, 1941v. 1 and 2 out of print.
v. 3. September 1941-May 1944, by C. C. Lingard and R. G. Trotter. 1950. 332 p.
v. 4. From Normandy to Paris, 1944-46, by F. H. Soward. 1950. 372 p.
v. 5. From U.N. to NATO, 1946-49, by R. A. Spencer. 1959. 460 p.
v. 6. 1949 to 1950, by W. E. C. Harrison. 1957. 382 p .
v. 7. September 1951 to October 195s, by B. §. Kerrstead, with the assistance of Muriel Armstrong. 1966. 268 p. (An Orford in Canada paperback, OCP 9)
v. 8. 1965 to 1955 , by D. C. Masters 1965. 223 p. (An Oxford in Canada paperback, OCP 4) v. 9. October 1955 to June 1957. by James Eayrs. 1965. 291 p. (An Orford in Canade paperback, OCP 5) v. 10 not yet published.
v. 11. 1959-1961, by R. A. Preston. 1965. 300 p.

Canadlan Institute on Poblic Afrairs. Diplomacy in eqolution; soth Couchiching Conference. Ed. by D. L. B. Hamlin. Toronto, University of Toronto Press, 1961. 128 p.
Conant, Melvin. The long polar watch; Canada and the defence of North America. New York, Harper, 1962. 204 p.
Congres dis appaires canadiennms. 4e, Québec, 1964. La dualité canadiente a lheure deg flatsUnis. Québec, Presses de l'Université Laval, 1965. 132 p. (CAC 4)
Deener, D. R., ed. Canada-United States treafy relations. Durham, N.C., Duke University Press, 1963. 250 p. (Duke University Commonwealth Studies Center publ., 19)

Eayrs, James. The art of the possible; government and foreign policy in Canada. Toronto, University of Toronto Press, 1961. 232 p.
Eayrs, James. Northern approaches; Canada and the search for peace. Toronto, Macmillan, 1961. 195 p.
Glazerrook, G. P. de T. A hitlory of Canadian external relations. Rev. ed. Toronto, McClelland and Stewart, 1966. 2 v . (The Carleton library, no. 27-28)
Glues, A. C. Minnesota and the manifest destiny of the Canadian Northwest; a study in CanadianAmerican relations. Toronto, University of Toronto Press, 1965. 311 p.
Keenleybide, H. L., et al. The growth of Canadian policiea in external affairs. Durham, N.C., Duke University Press, 1960. 174 p. (Duke University Commonwealth Studiess Center publ., 14)
LYon, P. V. The policy question; a critical appraisal of Canade's role in world affairs. Toronto, McClelland and Stewart, 1963. 128 p.
Macdonald, R. S., ed. The Arctic frontier. Toronto, University of Toronto Press, 1966. 311 p.
Merchant, L. T., ed. Neighbors taken for granted; Canada and the United States. New York, F. A. Praeger; Toronto, Burns and MacEachern, 1966. 166 p.
Minifis, J. M. Open at the top; seflections on U.S.-Canada relations. Toronto, MeClelland and Stewart, 1964. 104 p.
Patry, André. Le régime des cours d'eau internationatuc. Québec, Presses de l'Université Laval, 1960. 72 p .

Pearson, L. B. The four faces of peace and the infernational otellook; statements selected and edifed by Sherleigh G. Pierson. Toronto, McClelland and Stewart, 1964. 267 p.
Pearson, L. B. Politique mondiale et démocratie. Paris, La Colombe, 1958. 152 p.
Penington, Norman. Canada and imperialism, 1896-1899. Toronto, University of Toronto Press, 1965. 288 p.

Ridelle, W. A. Documents on Canadian foreion policy, 1917-1939. Toronto, Oxford University Press, 1962. 806 p.
Roussin, Marcel. Le Canada et le système interamericain. Ottawa, Editions de l'Université d'Ottawa, 1059. 285 p. (Les publications sériées de l'Université d'Ottawa, 59)
Sficer, J. K. A Samaritan statef External aid in Canada's foreign policy. Toronto, Univeraity of Toronto Press, 1966. 272 p.

## Government and Politics

Archison, J. H., ed. The political process in Canada; essaya in honour of R. M. Dawson. Toronto, University of Toronto Press, 1963. 193 p .
Angers, F. A. Essai sur la centralisation; analyse de principe politique et economique dans les perspections canadiennes. Montréal, Beauchemin, 1960. 331 p.
Anton, F. R. The role of povernment in the settlement of industrial disputes in Canada. Don Mills, Ont., CCH Canadian, 1962. 262 p.
Aghley, C. A., and Smails, R. G. H. Canadian crown corporations; some aөpects of their administration and control. Toronto, Macmillan, 1965. 360 p .
Bédard, Charles. Le régime juridique des Grands Lacs de l'Amérique du Nord et du Saint-Laurent. Québec, Presses de l'Université Laval, 1966. 178 p.
Bissonnette, Bernard. Essai sur la Constitution du Canada. Montréal, Editions du Jour, 1963. 199 p.
Brewin, F. A. Stand on guard; the search for a Canadian defence policy. Toronto, McClelland and Stewart, 1965. 140 p .
Canada. Département des Impressions et de la papeterie publiques. L'Administration fédérale du Canadá. Ottawa, Imprimeur de la Reine, 1966. 371 p.
Canada. Department of Public Printing and Stationery. Organization of the Government of Canada. Ottawa, Queen's Printer, 1966. 357 p.
Clumbnis, M. R. By their bootstraps; a history of the credit union movement in Saskatchewan. Toronto, Clarke, Irwin, 1965. 270 p .
Cohen, R. I. Quebec votes; the how and why of Quebec voting in every federal election since Confederation. Moutreal, Saje Publications, 1965. 128 p.
Conkn, R. I. Le vote au Québec; les apourquìs et scommenty du wote fédéral au Québec depuig la Confedération. Montréal, Saje Publications, 1965. 128 p.
Coox, G. R. Canada and the French-Canadian question. Toronto, Macmillan, 1966. 219 p.
Cook, Ramsay. The politics of John W. Dafoe and the Free Press. Toronto, University of Toronto Press, 1962. 305 p .
Cobbert, D. C. Politics and the airlines. Toronto, University of Toronto Press, 1965. 350 p .
Craig, W. G. The law and procedure of meetings in Canada. Toronto, Ryerson Press, 1966. 90 p.
Cbibpat, P. A., and MacPeerson, C. B., eds. The future of Canadian federalism. L'ajenir du fedéralisme canadien. Toronto, University of Toronto Press; Montréal, Presses de l'Université de Montréal, 1965. 188 p .
Dawbon, R. M. Democratic government in Canada. Rev. by W. F. Dawson. Toronto, University of Toronto Press, 1963. 194 p. (Canadian university paperbooks, 18)
Dawson, R. M., ed. The development of Dominion status, 1900-19s6. London, F Cass, 1965. 466 p.
Dawgon, R. M. The government of Canada. 4th ed. Rev. by Norman Ward. Toronto, University of Toronto Press, 1963. 610 p.
Dawson, W. F. Procedure in the Canadian House of Commons. Toroato, University of Toronto Press, 1962. 271 p. (Canadian government series, 12)
Donneliy, M. S. The government of Manitoba. Toronto, University of Toronto Press, 1963. 185 p. (Canadian government series, 14)
Faribatif, Marcel, and Fowler, R. M. Ten to one; the Confederafion wager. Toronto, McClelland and Stewart, 1965.150 p .
Farbavin, Marcel, et Fowler, R. M. Dix pour un; ou, Le pari confédératif. Montréal, Presses de l'Université de Montréal, 1965. 163 p.
Glazrbrook, G.P. de T. A history of Canadian political thought. Toronto, McClelland and Stewart, 1966. 360 p .

Ghant, G. P. Lament for a nation; the defeat of Canadian nationalism. Toronto, McClelland and Stewart, 1965. 97 p. (Canada today)
Greapon, G. K., and King, R. C. Canadian democracy at work. Rev. ed. Toronto, Macmillan, 1966. 116 p . (Canadian federal, provincial and municipal systems of government)

Gunn, Gertrude E. The political history of Newfoundland, 18ss-1864. Toronto, University of Toronto Press, 1966. $249 \mathbf{p}$. (Canadian studies in bistory and government, 7)
Gwyn, R. J. The shape of scandal; a study of a government in crieis. Toronto, Clarke, Irwin, 1965. 248 p.
Hampleton, George. The Parliament of Canada. Rev. ed. Toronto, Ryerson Press, 1961. 124 p.
Hodgetts, J. E., and Corbett, D. C. Canadian public administration. Toronto, Macmillan, 1960. 575 p.

Hotchison, Bruce. Mr. Prime Minister. 1867-1964. Toronto, Longmans, 1964. 394 p.
Kunz, F. A. The modern Senate of Canada, 1925-1969; a re-appraisal. Toronto, University of Toronto Press, 1965. 395 p. (Canadian government series, 15)

Lederman, W. R., ed. The courts and the Canadian constitution; a selection of essays. Toronto, McClelland and Stewart, 1964. 248 p. (Carleton library, no. 16)
Macdonald, Norman. Canada, immigration and colonization, 1841-190s. Toronto, Macmillan, 1966 381 p.
MacEwan, J. W. G. Poking into politics. Edmonton, Institute of Applied Art, 1966, 192 p.
McGregor, F. A. The fall and rise of Mackenzie King, 1911-1919. Toronto, Macmillan, 1962.358 p.
Mackay, R. A. The unreformed Senate of Canada. Rev. ed. Toronto, McClelland and Stewart, 1963. 216 p. (Carleton library, no. 6)

Mackenzie, W. L. The selected writings of William Lyon Mackenzie, 1824-18s7 Edited by Margaret Falrley. Toronto, Orford University Press, 1960. 383 p.
Mackinnon, Frank. The politics of education. Toronto, University of Toronto Press, 1962. 187 p. (Canadian university paperbooks, 4)
MacPrerson, C. B. Democracy in Alberta; Social Credit and the party system. 2d ed. Toronto, University of Toronto Press, 1962. 258'p. (Canadian university paperbooks, 9)
Macquarrie, H. N. The Conservative Party. Toronto, McClelland and Stewart, 1965. 166 p.
McWhinney, Edward. Comparative Sederalism; states' rights and national power. 2d ed. Toronto, University of Toronto Press, 1965. 114 p.
Metsel, John. The Canadian peneral election of 1957. Toronto, University of Toronto Press, 1962. 313 p. (Canadian government series, 13)
Morin, Rosaire. L'immigration au Canada. Montréal, Éditions de l'Action nationale, 1966. 172 p.
Nevers, Edmond de. L'avenir du peuple canadien-franfais. Nouv. ed. Montréal, Fides, 1964. 332 p. (Collection du Nénuphar, 27).
O'Hearn, P. J. T. Peace, order and good government; a new constifution for Canada. Torooto, Macmillan, 1964. 325 p .
Pare, Gérard, o.p. Au-delà du séparatisme: le Canada que j’aì revu. Montréal, Éditions du jour, 1966. 132 p. (Les Idées du jour, D-22)

Pickersgile, J. W. The Mackenzie King record, Vol. 1, 19s9-44. Toronto, University of Toronto Press, 1960. 723 p.
Quinn, H. F. The Union Nationale; a study in Quebec nationalism. Toronto, University of Toronto Press, 1963. 249 p.
Regenstrefr, Peter. The Diefenbaker interlude; parties and woting in Canada; an interpretation. Toronto, Longmans, 1965. 194 p.
Rowat, D. C. Your local government; a sketch of the municipal system in Canada. Toronto, Macmillan, 1962. 148 p.
Rogsell, P. H., ed. Leading constitutional decisions; cases on the British North America Act. Toronto, McClelland and Stewart, 1965. 234 p. (Carleton library, no. 23)
Saymeli, J. T. The office of Lieutenant-governor; a study in Canadian government and politics. Toronto, University of Toronto Press, 1957. 302 p. (Canadian government series, 9)
Scarrow, H. A. Canada votes; a handbook of federal and provincial election data. New Orleans, Hauser Press, 1962. 238 p.
Schmeiser, D. A. Civil liberties in Canada. London, Oxford University Press, 1964. 302 p.
Scotr, F. R., and Oliver, Michael, eds. Quebec states her case; speeches and articles from Quebec in the years of unrest. Toronto, Macmillan, 1964. 165 p .
Sloan, T. S. Quebec: the not-so-quiet revolution. Toronto, Ryerson Press, 1965. 121 p.
Sloan. T. S. Une révolution tranquille? Traduit par Michel van Schendel. Montréal, Editions, H MH, 1965. 159 p . (Collection aujourd'hui)
Tarnopolsky, W. S. The Canadian Bill of Rights. Toronto, Carswell. 1966. 246 p .
Tдомpson, R. N. Commonsense for Canadians; a selection of speeches analysing today's opportunities and problems. Toronto, McClelland and Stewart, 1965 . 162 p . (On Social Credit policies for Canada)
Thorburn, H. G. Party politics in Canada. Toronto, Prentice-Hall, 1963. 172 p.
Underhill, F. H. In search of Canadian liberalism. Toronto, Macmillan, 1960. 282 p.
Varcoe. F. P. The constitution of Canada. 2d. ed. Toronto, Carswell, 1965. 314 p.
Viau, Roger. Lord Durham. Montréal, Editious HMH, 1962. 181 p. (Figures canadiennes, 7)
Whlker, F. A. Catholic educalion and politics in Canada; a documentary study. Toronto, Nelsob, 1964. 507 p.

Ward, Norman. Government in Canada. Toronto, Gage, 1960. 326 p.
Ward, Norman. The Public purse; a study in Canadian democracy. Toronto, University of Toronto Press, 1962. 334 p. (Canadian government series, 11)

History
Babbead, Victor. Regards sur Montreal. Montréal, Academie canadienne-française, 1966. 163 p. (Academie cauadienne-irançaise. Cahiers, no 10)
Blanchard. J.-H. The Acadians of Prince Edward Island, 1790-1964. Charlottetown, 1964. 151 p.
Bolger, F.W. P. Prince Edward Island and Confederation, 1868-1878. Charlottetown, St. Dunstan's University Press, 1964. 308 p.
Bond, Courtney. City on the Ottawa; a detailed historical guide to Ottawa, the capital of Canada. Ottawa, Queen's Printer, 1965. 146 p.
Bond, Courtney. Ville sur l'Outaouais: puide historique détailé de la ville d'Ouawa, capitale du Canada. Ottawa, Imprimeur de la Reine, 1965. 151 p.
Brown, R. C., and Prang, Margaret E., eds. Confederation to 1949. Scarborough, Ont., PrenticeHall, 1966. 334 p. (Canadian historical documents series, v. 3)
Campaele, Marjorie F. A mountain and a city; the story of Hamillon. Toronto, McClelland and Stewart, 1966. 351 p .
Canada. Army. Strange battleground; the operations in Korea and their effects on the defence policy of Carada, by H. F. Wood. Maps by E. H. Ellwand. Ottawa, Queen's Printer, 1966. 317 p.
Canada. Armée. Singulier champ de bataille; les opérations en Corée et leurs effets sur la politique de défense du Carada, par H. F. Wood. Cartes par E. M. [sic] Ellwand. Ottawa, Imprimeur de la Reine, 1966. 354 p.
Canada. Army. Official history of the Canadian Army in the Second World War. Ottawa, Queen's Printer, 1955-1960. 3 v .
v. 1. Six years of war; the Army in Canada, Britain and the Pacifc, by C. P. Stacer.
v. 2. The Canadians in Italy, 1949-1945, by G. W. L. Nicholson.
v. 3. The victory campaign; the eperations in north-west Europe, 194-1945, by C. P Stacey.

Canada. Armée. Histoire officielle de la participation de l'Armée canadienne à la Seconde Guerre mondiale. Ottawa, Imprimeur de la Reine, 1957-1960. 3 y .
v. 1. Six années de guerre; l'Armée au Canada, en Grande-Bretagne et dans le Pacifque, par C. P. Stacey.
v. 2. Les Canadiens en Italie, 1949-1945, par G. W. L. Nicholson.
v. 3. La campagne de la victoire; les operations dans le nord-ouest del' Europe, 1944-1945, par C. P Stacey.
Canada. Dept. of National Defence. Naval Historical Section. Canadian naval operations in Korean waters, 1950-1955, by Thor Thorgrimsson and E. C. Russell. Ottawa, Queen's Printer, 1965. 167 p.
Canada. Ministère de la défense nationale. Section historique de la marine. Les opérations navales du Canada dans les eaux coréennes, 1950-1955, par Thor Thorgrimsson et E. C. Russell. Ottawa, Imprimeur de la Reine, 1965 . 178 p.
Card, B. Y. The Canadian Prairie Provinces from 187a-1950; a sociological introduction. Toronto, Dent, 1960.46 p .
Cabrless, J. M. S. Canada; a story of challenge. Rev. and enl. ed. Toronto, Macmillan, 1963. 444 p.
Clark, Gerald. Canada; the uneasy neighbor. Toronto, McClelland and Stewart, 1965. 433 p.
Clabsen, H. G. Thrust and counterthrust. The genesis of the Canada-United States boundary. Don Mills, Ont., Longmans, 1965.386 p .
Craig. G. M. Upper Canada, the formative years, 1784-1841. Toronto, McClelland and Stewart, 1963. 315 p . (Canadian centenary series, 7)

Creighton, D. G. The road to Confederation; the emergence of Canada, 1863-1867. Toronto, Macmillan, 1964.489 p.
Easton, Allan. 60 North; an Allantic battleground. Toronto, Ryerson Press, 1963. 287 p.
Eayrs, J. G. In defence of Canada. v. 1. From the Great War to the great depression. V. 2. Appeasement and rearmament. Toronto, University of Toronto Press, 1964-65. 2 v . (Studies in the structure of power; decision-making in Canada, 1, 3)
Eocles, W. J. Canada under Louis XIV 1663-1701. Toronto, McClelland and Stewart, 1964. 275 p. (Canadian centenary series, 3)
Fregault, Guy. Le Grand Marquis, Pierre de Rigaud de Vaudreuil et la Louisiane. 2e éd. Montréal, Fides, 1963. 481 p. (Collection Fleur de lys)
Frúgadit, Guy, Trudeau, Marcel, et Brunet, Guy. Histoire du Canada par les textes. Ed. revue et augm. Montréal, Fides, 1963. 2 v .
Gordon, W. L. Le Canada d l'heure du choix. Traduit par Hélène J. Gagnon. Montréal, Editions HMH, 1966.139 p . (Collection aujourd'hui)
Gormon, W. L. A choice for Canada: independence or colonial status. Toronto, McClelland and Stewart, 1966. 125 p .
Grat, J. H. The winter years; the depression on the Prairies. Toronto, Macmillan, 1966. 220 p.

Groulx, Lionel. Histoire du Canada français. 4e éd. Montréal, Fides, 1960-1962. 2 v. (Collection Fleur de lys)
Harpis, R. C. The seigneurial system in early Canada; a geographical study. Madison, University of Wisconsin Press; Québec, Presses de l'Université Laval, 1966. 247 p.
Hirsman, J. M. The incredible War of 1812; a military history. Toronto, University of Toronto Press, 1965. 265 p.
Hoprman, B. G. Cabot to Cartier, sources for a historical ethnography of northeastern North America, 1497-1550. Toronto, University of Toronto Press, 1961. 287 p.
Jenkins, Kathleen. Montreal; island city of the St. Lawrence. Garden City, N.Y., Doubleday, 1966. 559 p. (The Romance of Canadian cities series, 2)

Jolien, Claude. Le Canada: dernière chance de l'Europe. Paris, Grasset, 1965. 294 p.
Kerb, D. G. G., ed. A historical atlas of Canada. Cartography preparation by C. C. J. Bond, drawing by E. M. Walse. 2d ed. Toronto, Nelson, 1966.120 p.
Kerk, D. G. G., and Davidson, R. I. K., eds. Canada: a visual history. Toronto, Nelson, 1966. 170 p . (Compliments D. G. G. Kerr's "A historical atlas of Canada")
Lanctot, Gustave. Le Canada et la Révolution américaine. Montréal, Beauchemin, 1965. 330 p.
Lanctot, Gustave. Histoire du Canada. Montréal, Beauchemin, 1962-1964. 3 v .
Lanctor, Gustave. A history of Canada. Toronto, Clarke, Irwin, 1963-65. 3 v.
Lower, A. R. M. Colony to nation; a history of Canada. 4th ed. rev. Don Mills, Ont., Longmans, 1964. 600 p .

MacNuTr, W S. The Atlantic Provinces; the emergence of colonial society 1712-1857. Toronto, McClelland and Stewart, 1965.305 p . (Canadian centenary series, 9)
$\mathrm{M}_{\mathrm{ac}} \mathrm{NJtt}, \mathrm{W} . \mathrm{S} . \quad$ New Brunswick; a history, 1784-1867. Toronto, Macmillan, 1963. 496 p.
Mannna, Helen Taft. The Revolt of French Canada, 1800-1835. Toronto, Macmillan, 1962. 426 p.
Masser, Vincent. Confederation on the march; views on major Canadian issues during the sixties. Toronto, Macmillan, 1965. 101 p .
Mathews, Hazel. The mark of honour. Toronto, University of Toronto Press, 1965. 220 p. (Canadian studies in history and government, 6) (An account of the Loyalist, Scots who moved to Canada irom the U.S. following the American Revolution)
Morton, W. L. The critical years; the union of British North America, 1857-187s. Toronto, McClelland and Stewart, 1964. 322 p. (Canadian centenary series, 12)
Morron, W. L. The Kingdom of Canada; a general history from earliest times. Toronto, MeClelland and Stewart, 1963. 556 p .
Morton, W. L., ed. Manitoba: the birth of a province. Altona, Man. Printed....by D. W. Friesen, 1965. 265 p. (Manitoba Record Society Publications, v. 1)

Mowat, F. M. Westriking; the ancient Norse in Greenland and North America. Toronto, MeClelland and Stewart, 1965. 494 p.
Neatby, Hilda. Quebec: the revolutionary age, 1760-1791. Toronto, McClelland and Stewart, 1966. 300 p . (Canadian centenary series, 6)
Nicholson, G. W. L. Canadian Expeditionary Force, 1914-1919. Ottawa. Queen's Printer, 1962. 621 p.
Nreholson, G. W. L. Le Corps expeditionnaire canadien, 1914-1919. Ottawa, Imprimeur de la Reine, 1963. 671 p.
Nrsh, J. C., ed, and trans. The French regime. Scarborough, Ont., Prentice-Hall, 1965. 176 p. (Canadian historical documents series, v. 1)
Nish, J. C., éd. Le régime français, 15s4-1760. Textes choisis et rédiges par Cameron Nisg. Scarborough, Ont., Prentice-Hall, 1966. 190 p. (Histoire du Canada: textes et documents, v. 1)

Oleson, T. J. Early poyages and northern approaches, 1000-16\$s. Toronto, McClelland and Stewart, 1963. 211 p . (Canadian centenary series, 1)

Ollivier, Maurice. Actes de l'Amérique du Nord Britannique et status conneres, 1867-1968. Ottawa, Imprimeur de la Reine, 1962.675 p.
Olimier, Maurice. British North America Acts and selected statutes, 1867-196s. Ottawa, Queen's Printer, 1962. 662 p.
Orмsby, Margaret A. British Columbia; a history. Toronto, Macmillan, 1958. 558 p.
Raddall, T. H. Halifax, warden of the North. Garden City, N.X., Doubleday, 1965. 340 p. (The romance of Canadian cities series)
Retd, J. H. S., McNafger, Kenneth, and Crowe. H. S. A source-book on Canadian history; zelected documents and personal papers. Rev. ed., with index. Toronto, Longmans, 1964. 485 p .
Rice, E. E. Hudson's Bay Company, 1670-1870. Toronto, McClelland and Stewart, 1960. 3 v.
Robinson, P. J. Toronto during the French régime; a history of the Toronto region from Brule to Simcoe, 1615-179s. 2d ed. Toronto, University of Toronto Press, 1965. 274 p.

Scadding, Canon Henry. Toronto of old. Abridged and edited by F. H. Armstrong. Toronto, Oford University Press, 1968. 396 p .
Schull, Joseph. The far distant ships; an official accounl of Canadian naval operations in the Second World War. Ottawa, Queen's Printer, 1961. 527 p.
Schull, Joseph. Lointains nadires; compte rendu officiel des opérations de la Marine canadienne au cours de la seconde Grande Guerre. Ottawa, Imprimeur de la Reine, 1953. 605 p.
Spry, Irene M. The Palliser Expedition. Toronto, Macmillan, 1963. 310 p .
Stanley, G. F. G. The birth of western Canada; a history of the Riel Rebellions. Toronto, University of Toronto Press, $1963.475 \mathrm{p} . \quad$ (Canadian university paperbooks, 10 ).
Stantey, G. F. G. Canada's soldiers; the military history of an unmilitary people. Rev. ed. Toronto, Macmillat, 1960.449 p.
stanlex, G. F. G. The story of Canada's flag; a historical sketch. Toronto, Ryerson Press, 1965. 96 p .
Sweitenham, J. A. To seize the victory; the Canadian Corps in World War I. Toronto, Ryerson Press, 1965. 265 p.
Trudel, Marcel. Atlas historique du Canada français, des origines a 1867. Ed. remaniée. Québec, Presses de l'Universite Laval, 1961. 93 p.
Trodest, Marcel. L'esclavage au Canada francais. Québec, Presses de l'Université Laval, 1960. 432 p .
Trubel, Marcel, Histoire de la Nouvelle-France. v. 1, 1524-1603. v. 2, 1604-1627. Montréal, Fides, 1963-1966. 2 v .
Unifersity League for Social Reporm. Nationalism in Canada. Edited by Peter Roseell. Toronto, McGraw-Hill, 1966.377 p .
University League yor Soctal Refonm. The prospects of change; proposals for Canada's future. Edited by Abraham Rotstein. Toronto, McGraw-Hill, 1965. 361 p.
Warte, P. B. The life and times of Confederation, 1864-1867. Toronto, University of Toronto Press, 1962. 379 p .

Wart, P, B., ed. Pre-Confederation. Scarborough, Ont., Prentice-Hall, 1965. 242 p. (Canadian historical documents series, v. 2)
Walker, F. N. Sketches of old Toronto. Don Mills, Ont., Longmans, 1965. 350 p .
Wallot, J.-P. Intrigues françaises et américaines au Canada, 1800-1802. Montréal, Éditions Leméac, 1985. 142 p .

Whitsaw, W. M. The Maritimes and Canada before Conjederation. Toronto, Oxford University Press, 1966. 347 p. (An Oxford in Canada paperback, OCP 8)
Worthington, Clara E. Amid the ouns below; the story of the Canadian Corps, 1914-1919. Toronto, McClelland and Stewart, 1965. 171 p .
Zaelow, Morris, and Turner, W. B., eds. The defended border: Upper Canada and the Wat of 1818; a collection of uritings giving a comprehensive picture of the War of 1812 in Upper Canada. Edited for the Ontario Historical Society. Toronto, Macmillan, 1964. 370 p .

## Literature and the Arts

Angus, Margaret. The old stones of Kingston; its buildings before 1867. Photos by G. E. O. Luleve, Toronto, University of Toronto Press, 1966. 120 p .
Arthur, E. R. Toronto, no mean city. Toronto, University of Toronto Press, 1964. 280 p.
Barbiat, Marius. Folk songs of old Quebec. Song translations by Regina L. Shoolman. 2d ed. Ottawa, Queen's Printer, 1964. 72 p. (National Museum of Canada bulletin 75)
Barbeat, Marius. Le rossignol y chante; première partie du répertoire de la chanson folhlorique frangaise au Canada. Ottawa, Imprimeur de la Reine, 1962. 485 p . (Musée national du Canada bulletin 175)
Béraudd, Jean. $\$ 50$ ans de thêâtre au Canada franģis. Montréal, Cercle du Livre de France, 1958. 316 p. (Encyclopedie du Canada français, v. 1)
Blasell, C.T., comp. Great Canadian woriting: a century of imagination. Toronto, Canadian Centernial Pub. Co., 1966. 127 p . (The Canadian centennial library)
Canapa. National Gallery. Catalooue of paintings and sculpture. Vol. III: Canadian school. Toronto, University of Toronto Press, 1960.463 p .
Canadian Broancasting Conporation. International Service. Thirty-four biographies of Canadian composers. Trente-quatre biographies de compositeurs canadiens. Montreal, 1964. I10 p. (Text
bilingal) bilingual)
Canadun Music Centre. Cafalogue of orchestral music at the Canadian Music Centre, including orchestra, band, concertos, operas and vocal-orchestral. Catalogue des oexpres disponibles au Centre musical canadien, orcheetre, fanfare et harmonie, opera, voix et orchestre. Toronto, 1963. 22, 120 p .

La Chanson française par Jacques Charpentreau et autres. Montréal, Editions Bellarmin, 1965. 136 p. (Collection "College et famille" $n^{\circ} 1$ )
Collet, Paulette. L'Hiver dans le roman canadien-frangais. Québec, Presses de l'Universite Laval, 1965. 281 p. (Vie des lettres canadiennes, 3)

Creigrton, Helen. Maritime folk songs. Musical transcriptions and chord symbols by Kenneth Peacock. Toronto, Ryerson Press, 1962. 214 p.
Duval, Paul. Group of Seyen drawings. Toronto, Burns and MacEachern, 1965. 1 v . (chiefly illus.)
Fowke, Edith, and Mimss, Alan. Canada's story in song. Rev. ed. Piano accompaniments by Helmut Blume. Guitar accompaniments by Bran Morrison. Toronto, W. J. Gage, 1965. 230 p . (Songs accompanied by explanatory text)
Fowke, Edith, ed. Traditional gingers and songs from Ontario. Toronto, Burns and MacEachern; 1965. 210 p . (Traditional singers and songs, $v, 1$ )

The Gallery of Canadin Art. Toronto, McClelland and Stewart, 1962-65.

1. Corneliut Krieghoff, by Marius Barbeav. 15 p., 30 p. of illus.
2. Tom Thomson, by R. H. Hubbard. $16 \mathrm{p} ., 30 \mathrm{p}$. of illus.
3. David Milne, by Alan Jarvis. 16 p., 30 p. of illus.
4. Alfred Pellan, by D. W. Buehanan. $15 \mathrm{p} ., 30 \mathrm{p}$. of illus.
5. On the enjoyment of modern art; an explanatory text. Illus. by Canadian paintings. 72 p .

Gowans, A. W. Building Canada; an architectural history of Canadian life. Rev. and enl. ed. Toronto, Oxford University Press, 1966. 412 p. (First ed. 1958, under title Looking at architeo ture in Canada)
Grandmond, Eloi de, Hodon, Normand, et Roux, J. L. Dix ans de theatre au Nouveau Monde; histoire d'une compagnie thêâtrale canadienne. Montréal, Editions Leméac, 1961. 1v. (non paginé)
Grandpre, Pierre de. Dix ane de vie littéraire au Canada français. Montréal, Beauchemin, 1960. 293 p.
Great Canadian painting; a century of art. Toronto, Canadian Centenvial Pub. Co., 1966. 127 p. (The Canadian centennial library)
Greenhill, R. A. Early photography in Canada. Toronto, Offord University Press, 1965. 173 p.
Hamelin, Jean. Le renouveau du théatre au Canada frangais. Montréal, Editions du Joar, 1062. 160 p.
Harper, J. R. Painting in Canada; a history. Toronto, University of Toronto Press, 1960. 443 p.
Harper, J. R. La peinture au Canada des origines à nos jours. Québec, Presses de l'Université Laval, 1966. 442 p .

Heinrice, T. A., ed. Art treasurea in the Royal Ontario Museum. Toronto, McClelland and Stewart, 1963. 200 p.
Hubbard, R. H., ed. An anthology of Canadian art. Toronto, Orford University Press, 1960. 187 p.
Hubbard, R. H. The development of Canadian art. Ottawa, Queen's Ptinter, 1963. 137 p.
Hubbard, R. H. L'évolution de l'art au Canada. Ottawa, Imprimeur de la Reine, 1963. 137 p.
Johnson, E. Pauline. Pauline Johnson: her life and work; her biography written by, and her prose and poems selected by Marcus Van Stern. Toronto, Musson, 1965. 279 p.
$\mathrm{K}_{\text {allman, }}$ Helmut. A history of music in Canada 1554-1914. Toronto, University of Toronto Press, 1960. 311 p.

Klinck, C. F., and Watters, R. E., eds. Canadian antholagy. Rev. ed. Toronto, Gage, 1966. 626 p. (Selected poetry and prose from English-Canadian literature)
Klince, C. F. et al., eds. Literary history of Canada; Canadian literature in English. Toronto, University of Toronto Press, 1965. 945 p .
Layton, Irving. Collected poems. Toronto, McClelland and Stewart, 1965. 353 p.
Maceenzie, W. R., comp. Ballads and sea songs from Nova Scotia. Hatboro, Pa., Folkiore As. sociates, 1963.421 p.
MacRae, Marion, and Adambon, Anthony. The ancestral roof; domestic architecture of Upper Carada. Toronto, Clarke, Irwin, 1963. 258 p.
Mune, W. S., comp. Canadian full-length plays in English; a preliminary annotated catalogue. Ottawa, Dominion Drama Festival, 1964. 47 p .
Mmne, W. S., comp. Canadian full-lenoth plays in English, II. Ottawa, Dominion Drama Festival, 1966. 39 p . (A supplement to the preliminary annotated catalogue)

Montráal. Musée des beaux-arts. Le Musée des beaut-arts de Montreal; peinture, sculphare, arts décoratifs. Montreal, 1960. 192 p .
Montréal. Museum of Fine Arts. The Montreal Museum of Fine Arts; painting, sculpture, decorttive arts. Montreal, 1960. 192 p.
Montrital. Musée des beaux-arts. Paul Emile Borduas, 1905-1960. Montréal, 1962. 57 p.

Monssert, Gérard. La peinture traditionnelle au Canada francais. Montréal. Cercle du Livre de France, 1960. 216 p. (Encyclopédie du Canada français, v. 2)
Morbis, Peter, and Kardise, Latry, comps. and eds. Canadian feature films, 1914-1964. Ottawa, Canadian Film Institute, 1965. 57 p . (Canadian Film Archives. Canadian filmography series, no. 1)
Morris, Peter, ed. The National Film Board of Canada: the war years; a collection of contemporary articles and a selected index of productions. Ottawa, Canadian Film Institute, 1965. 32 p. (Canadian Film Archives. Canadian filmography series, no. 3)
Pacey. Desmond. Creative writing in Canada; a short history of English Canadian literature. 2d ed. Toronto, Ryerson Press, 1961. 314 p.
Palardy, Jean. The early furniture of French Canada. 2d ed. Toronto, Macmillan, 1965. 413 p.
Palardy, Jean. Les meubles anciens du Canada jrancais. 2e ed. rev. et augm. Paris, Arts et métiers graphiques, 1965. 411 p.
Paradis, Suzanne. Femme fictive, femme réelle; le personnage feminin dans le roman feminin canadienfrançis, 1884-1966. Québec, Garneau, 1966. 330 p .
Peacock, Kenneth. Songs of the Newfoundland outports. Ottawa, Queen's Printer, 1965. 3 v. (National Museum of Canada bulletin no. 197)
Recherches Soctographoues. Colloque. 2e, Québec, 1964. Littérature et société canadiennesfrançaises; ouyrage réalisé sous la direction de Fernand Dumont et J.-C. Falardeau. Québec, Presses de l'Université Laval, 1964. 272 p .
Richards, Stanley, ed. Canada on stage; a collection of one-act plays. Edited and introduced by Stanley Fichards. Toronto, Clarke, Irwin, 1980. 324 p .
Robert, Guy. Ecole de Montreal; situation et tendances-situation and trends. Traduction anglaise de George Lach. Montréal, Editions du Centre de psychologie et de pédagogie, 1964. 150 p . (Collection Artistes canadiens, 3)
Robert, Guy. Littérature du Québec. T. 1. Témoignages de 17 poètes. Montréal, Librairie Déom, 1964. 333 p . (Doit comprendre 8 tomes)
Robrrt, Guy. Pellan; sa vie et son oeuvre-his life and his art. Montréal, Editions du Centre de psychologie et de pédagogie, 1963. 135 p . (Collection Artistes canadiens)
Robidoux, Réjean, o.m.i., et Renaud, André. Le roman canadien-français du vinglième siècle. Ottawa, Editions de l'Université d'Ottawa, 1966. 221 p . (Visage des lettres canadiennes)
Le roman canadien-français: evolution, témoignages, bibliographie. Montréal, Fides, 1964. 458 p. (Archives des lettres canadiennes, t. 3)
Rome, David. Jews in Canadian literature; a bibliography. Montreal, Canadian Jewish Congress and Jewish Public Library, 1962. 259 p.
Ross, Malcolm, ed. Poets of the Confederation. Toronto, McClelland and Stewart, 1960. 130 p. (A New Canadian library original, 91)
Smiri, A. J. M. The book of Canadian prose. v. 1. Early beginnings to Confederation. Toronto, Gage, 1965.
Smitr, A. J. M. The Oxford book of Canadian verse in English and French, 1960. Toronto, Oxford University Press, 1965. 445 p . (An Oxford in Canada paperback, 1)
Spence, Hilda, and Spence, Kevin. A guide to early Canadian glass. Dou Mills, Ont., Longmans, 1966. 112 p .

Stratpord Sgakespearean Festival Foundation of Canada. The Stratford Festival story, 196s1986. Stratford, Ont., 1968.29 p.

Swinton, George. Eskimo sculpture. Sculpture esquimaude. Toronto, McClelland and Stewart, 1965. 224 p . (Text bilingual)

Sylvestre, Guy. Anthologie de la poésie canadienne-frangaise. 4e ed. Montreal, Beauchemin, 1964. 376 p .

Terrio, Adrien. Conteurs canadiens-francais; épaque contemporaine. Montrésl, Librairie Déom, 1965. 322 p . (Anthologie formé de récits de vingt-trois auteurs)

Tougns, Gérard. Histoire de la littérature canadienne-francaise. 3eéd. Paris, Presses universitaires de France, 1966. 312 p.
Tougas, Gérard. History of French-Canadian literature. Translation by Alta L. Cook. 2d ed. Toronto, Ryerson Press, 1966. 301 p.
Watiers, R. E., ed. British Columbia. 2d ed. Toronto, McClelland and Stewart, 1961. 576 p. (An anthology)
 (An Oxford in Canada paperback, 7)
Weir, E. A. The struggle for national broadcasting in Canada. Toronto, McClelland and Stewart, 1965. 477 p .

Whson, M. T., ed. Poetry of midcentury, 1940-1960. Toronto, McClelland and Stewart, 1964. 237 p. (New Canadian library original, no. 04. Poets of Canada, v. 3)

Wilson, R. D. Le passé vizant de Montreal. The living paat of Montreal. (Texte de Eric McLean, Version française de Paul Roussex.) Montréal, McGill University Press, 1964. 11 p., 10 pl.
W ycz rnsiki, Paul. Francois-Xavier Garneau; aspects litteraire de son oeuvre. Ottawa, Editions de l'Universite d'Ottawa, 1966. 207 p . (Visage des lettres canadiennes)

## General Reference Works

Anger, W. H., and Anger, H. D. A digest of Caradian law. 18th ed. by F. R. Hume. Toronto, Canada Law Book Co., 1961. 538 p.
The Atlantic year book. Fredericton, N.B. Published for the Atlantic Advocate by Brunswick Press. Annual.
Boulr, Reynald, comp. Bibliographie du droit canadien. Montréal, Wilson et Lafleur, 1966. 393 p.
Boulr, Reynald, comp. A bibliography of Canodian law. Montreal, Wilson and Lafleur, 1966. 393 p.
Canada. Department of Public Printing and Stationery. Canadian government publications catalogue. Ottawa, Queen's Printer. Annual.
Canada. Département des impressions et de la papeterie publiques. Publications du gouvernement canadien; catalogue. Ottawa, Imprimeur de la Reine. Annuel.
Canada. Dominion Bureau of Statistics. Canada one hundred 1867-1967. Ottawa, Queen's Printer, 1967. 512 p. (A Centennial volume published in lieu of "Canada 1967; official handbook of present conditions and recent progress")
Canada. Bureau fédéral de la statistique. Canada un siècle 1867-1967. Ottawa, Imprimeur de la Reine, 1967. 512 p. (Edition spéciale pour le Centenaire, qui remplace "Canada 1967; revue officielle de la situation actuelle et des progrès récents.)
Canada. Dominion Bureau of Statisties. Canada year book, 1966. Ottawa, Queen's Printer, 1966. 1192 p.
Canada. Bureau fédéral de la statistique. Annuaire du Canada, 1966. Ottawa, Imprimeur de la Reine, 1966. 1302 p.
Canada. Dominion Bureau oí Statistics. Daily bulletin. Ottawa, Queen's Printer.
Canada. Bureau tédéral de la statistique. Le bulletin quotidien. Ottawa, Imprimeur de la Reine.
Canada. Dominion Bureau of Statistics. Canadian statistical review. Ottawa, Queen's Printer. Monthly, with weekly and bilingual annual supplements.
Canada. Bureau fédéral de la statistique. Revue statistique du Canada. Ottawa, Imprimeur de la Reine. Mensuel avec supplements hebdomadaires.
Canada. Dominion Bureau of Statistics. Publications of the Dominion Bureau of Statistics, 1064. Burean federal de la statistique, publications. Ottawa, Queen's Printer, 1965. 325 p .
Canada. Dominion Bureau of Statistics. National accounts, income and expenditure. Ottawa, Queen's Printer. Quarterly and annual.
Canada. Department of Mines and Technical Surveys. Allas of Canada. Ottawa, Queen's Printer, 1957. $7 \mathrm{p} ., 110$ double-sheet maps.
Canada. Ministère des Mines et des Relevés techniques. Atlas du Canada. Ottawa, Imprimeur de la Reine, 1958. 450 cartes, 110 feuilles.
Canada. National Film Board. Canadian picture index. Ottawa, Queen's Printer, 1963-65. $2 \mathbf{v}$. Looseleaf in binder. (v. 1 English only; v. 2 bilingual)
Canada. Office national du film. Répertoire des photos du Canada. Ottawa, Imprimeur de la Reine, 1963-1965. 2v. Feuilles volantes dans un relieur de toile. (v. 1 en anglais seulement; v. 2 bilingue)

Canada. National Library; Canadiana; publications of Canadian interest noted by the National Library. Ottawa, Queen's Printer. Monthly, with annual cumulation.
Canada. Bibliothèque nationale. Canadiana; publications se rapportant au Canada notées par la Bibliothèque nationale. Ottawa, Imprimeur de la Reine. Mensuel, avec refonte annuelle.
Canada. National Library. Canadiana, 1950-1962, index. Ottawa, Queen's Printer, 1965. 2 v .
Canads. Bibliothèque nationale. Canadiana, 1950-196e, index. Ottawa, Imprimeur de la Reine, 1965. 2 v .

Canada careers directory for university graduates. Choisissez votre carrière, pour diplomée universitaires. Montreal, Cornmarket Press. Bilingual. Bilingue. Annual. Annuel.
Canada legal directory, for the legal profession, containing the names of the judges, lawyers, court officials, etc., throughout Canada. Toronto, Canada Legal Directory (125 Lowther Ave.) Annual.
Canadian almanac and directory. Toronto, Copp Clark. Annual.
Canadian annual review. Toronto, University of Toronto Press. (Includes some text in French)
Canadian Cultural Informayton Centre. Some Canadian cultural organizations. Certainea organisations culturelles canadiennes. Ottawa, 1965. 72 p. (Text bilingual)

The Canadian dictionary; French-Enolish, English-French. Concise ed. Toronto, MeClelland and Stewart, 1962. 861 p.
Dictionnaire canadien; frangais-anglais, anglais-frangais. Ed. abregée. Toronto, McClelland and Stewart, 1962. 861 p.
Canadian hospital directory. Toronto, Canadian Hospital Association. Annual.
Canadian medical directory. Toronto, Seccombe House. Annual.
Caradian periodical index; an author and subject index. Jan. 1938-Dec. 1947. Ottawa, Canadian Library Association, Association canadienne des bibliothèques, 1966. V. 1, A-D; V. 2, E-N. To be completed in 3 vols. (Cumulates and supersedes the annual cumulations compiled by the Circulation Dept. of the University of Toronto Library.
Canadian periodical index. Index de périodiques canadiens. Ottawa, Canadian Library Association. Association canadienne des bibliothèques. Monthly. Mensuel.
Catalogue de l'édition au Canada français, 1966-87. Montréal, Conseil supérieur du livre, 1966. 358 p.
Encyclopedia Canadiana. Centennial ed. Toronto, Grolier of Canada, 1966. 10 v.
Index to Canadian legal periodical literature, 1965-65. Montreal, Canadian Association of Law Libraries, 1966. 316 p .
Library directory. Répertoire des bibliothèques canadiennes. Part II of January issue of Canadian Library. Canadian Library Association. Association canadienne des bibliothèques. Ottawa. Annual. Annuel.
Lives et auteurs canadiens; panorama de la production littéraire. Montréal, Editions Jumonville. Annuel.
McGul Untyersity, Montreal. Library. The Laurence Lande Collection of Canadiana; a bibliography. Collected, arranged and annotated by Lawrence Lande. Montreal, Lawrence Lande Foundation for Canadian Historical Research, 1965. 301 p.
Perl, Bruce, comp. A bibliography of the Prairie Provinces to 1953. Toronto, University of Toronto Press, 1956. 680 p . Supplement. Toronto, University of Toronto Press, 1963. 130 p .
Prisstley, F. E. L. The humanities in Canada; a report prepared for the Humanities Research Council of Canada. Toronto, University of Toronto Press, 1964. 246 p . (Bibliography of scholarly publications, p. 98-246)
Roy, G. R., and Gnarowski, Michael, comps. Canadian poetry; a supplementary bibliography. Quebec, Culture, 1964. 13 p. (Intended as a supplement to existing bibliographies, notably to $A$ check list of Canadian literature and background material, 1628-1950, by R. E. Watters)
Slavica Canadiana. 1965. Winnipeg, Canadian Association of Slavists, 1966. 64 p. (Slavistica, 57)
Tanghe, Raymond. Bibliography of Canadian bibliographies. Toronto, University of Toronto Press, 1960.206 p . With biennial supplements.
Tangere, Raymond. Bibliographie des bibliographies canadiennes. Toronto, University of Toronto Press, 1960. 206 p . Avec suppléments bienvaur.
Urqubart, M. C., and Buckley, K. A. H. Historical statistics of Canada. Cambridge, Eng., University Press; Toronto, Macmillan, 1965. 672 p .
Whters, R. E., comp. A check list of Canadian literature and background material, 1628-1950. Toronto, University of Toronto Press, 1960. 789 p.
$W_{\text {atters, }}$ R. E., and Bell, I. F., comps. On Canadian literature, 1806-1960; a check list of articles, books and theses on English-Canadian literature, its authore, and language. Toronto, University of Toronto Press, 1966. 165 p.

## Section 2.-Federal Government Information Services

The chief source of statistical information on all phases of the economy of Canada is the Dominion Bureau of Statistics where the ten-year and five-year censuses of Canada are planned and statistical information of all kinds-federal and provincial-is centralized. Certain areas of effort, such as trade and commerce, customs and excise, currency and banking, navigation, transportation, radio, population and national defence are constitutionally federal affairs and on such subjects the respective departments at Ottawa are the proper sources of information with which to communicate. Other fields of effort such as the administration of lands and natural resources, education, roads and highways, and health and hospitals are the responsibility of the provinces and data may be obtained concerning the individual provincial efforts in these fields from the respective provincial government departments. However, certain federal departments are also concerned with specific aspects of these subjects and, as in the case of the Dominion Bureau of Statistics, in the co-ordination and presentation of the material for Canada as a whole. The Government of Canada, while not administering the resources within the provincial boundaries,
co-operates closely with the provinces and is in a position to furnish material for Canada, especially production data on a national basis, marketing data on international, national and provincial bases, research work and experimental station data on a national basis, and also on a provincial basis from Federal Government stations located within particular provinces. In agriculture, for instance, data on the breeding of livestock and the improvement of strains, on agricultural marketing and on crop yields are cases in point; in forestry, questions on forest research, forest fire protection and reforestation offer good examples.

Certain Federal Government bodies and national agencies, because of the nature of their work and the appeal it has to broad sections of the population, are organized primarily as information or publicity agencies. Among these are: the Information Division, Department of External Affairs, which deals with questions about external affairs originating in Canada and with general requests originating abroad for information on Canada and Canadian affairs; the Trade Publicity Branch, Department of Trade and Commerce; the Information Services Division, Department of National Health and Welfare; the Canadian Broadcasting Corporation; and the National Film Board. The Departments of Agriculture, Fisheries, Forestry, Indian Affairs and Northern Development, and Energy, Mines and Resources, and such agencies as the National Gallery of Canada, the National Museum of Canada, the National Library, and the National Research Council, while not thus classed, are interested in the dissemination of information to a greater extent than most of the remaining government departments, although several of the latter have publicity branches.

Thus, inquiries for information of a statistical nature should be forwarded to the Information Division, Dominion Bureau of Statistics, Ottawa. Inquiries to federal sources for information not of a statistical nature should be sent as a general rule to the individual departments and agencies of government which are listed, with their functions, at pp. 130-150 of this publication. Inquiries relating to provincial efforts may be directed to the provincial government department concerned. Inquiries about the Yukon and Northwest Territories should be addressed to the Northern Administration Branch, Department of Indian Affairs and Northern Development, Ottawa.

## Section 3.-Sale of Official Publications

Under the provisions of the Public Printing and Stationery Act, the Queen's Printer, Ottawa, has charge of the sale of all official publications of Parliament and the Government of Canada that are issued to the public, as well as of the free distribution of all public documents and papers to persons and institutions (libraries) entitled by statutory provisions to receive them. The regulations relating to the distribution and sale of government publications made in accordance with the provisions of Sect. 7 of the Public Printing and Stationery Act and Sect. 7 (e) of the Financial Administration Act were brought up to date and approved by Treasury Board on Mar. 31, 1955.

In compliance with these regulations, the Queen's Printer issues the Daily Checklist of Goternment Publications which records for the information of the public service, libraries, etc., all Federal Government publications immediately upon release. Those authorized by law or regulation to receive free copies of government publications receive the Daily Checklist without charge; others desiring the service may purchase an annual subscription to be forwarded daily or in weekly batches as requested.

The Queen's Printer also issues the Monthly Catalogue of Canadian Government Publications, a comprehensive listing of all official publications, public documents and papers not of a confidential nature published at government expense, an Annual Catalogue (in January) listing all publications issued during the previous year, as well as sectional catalogues and selected titles bulletins advertising new goverament publications.

The Queen's Printer is the national sales agent in Canada for publications issued by the United Nations; the United Nations Educational, Scientific and Cultural Organization; the World Health Organization; the Food and Agriculture Organization; the Organization for Economic Co-operation and Development; the International Atomic Energy Agency;
the International Civil Aviation Organization; the Council of Europe; the Commonwealth Economic Committee; the Organization of American States (Pan American Union); the General Agreement on Tariffs and Trade; the New Zealand Government; the International Labour Organization; the World Meteorological Organization; and the International Telecommunication Union.

Canadian Government and international organizations publications may be obtained from Queen's Printer bookstores located in Ottawa, Toronto, Montreal, Winnipeg and Vancouver (see imprint on the reverse side of the title page), or by mail from the Queen's Printer, Ottawa.

Dominion Bureau of Statistics Publications.-The Dominion Bureau of Statistics acts as the agent of the Queen's Printer with respect to the sale of DBS publications. Reports of the Bureau cover all aspects of the national economy; the Canada Year Book and Official Handbook Canada constitute authoritative compendiums of information on the institutions and economic and social development of Canada.

DBS publications are listed with their prices in the Queen's Printer's Catalogues of Canadian Government Publications. The DBS Daily Bulletin and Weekly Bulletin, prepared by the Information Division, are designed to serve persons wishing to keep closely informed on the full range of published information issued by the Bureau; the annual subscription price of each is \$1. Subscription orders for DBS publications or orders for single copies should be addressed to the Publications Distribution Unit, Dominion Bureau of Statistics, Ottawa, and should contain the necessary remittance in the form of a cheque or money order made payable to the Receiver General of Canada.

Provincial Government Publications.-Most provincial government publications may be obtained from the Queen's Printer of the province concerned. Inquiries should be addresssed to the provincial capital cities:-

| Newioundland. | .. St. John's | Ontario....... | Toronto |
| :---: | :---: | :---: | :---: |
| Prince Edward Island. . | ..Charlottetown | Manitoba........ | Wianipeg |
| Nova Scotia. | . Halifax | Saskatchewan.. | . Regina |
| New Brunswick. | . Fredericton | Alberta. . | .Edmonton |
| Quebec. | Quebec | British Columbia. | Victoria |

## DIRECTORY OF SOURCES OF OFFICIAL INFORMATION

Nore.-In the "Federal Data" column, the major source of information on each subject is given first; other sources follow in alphabetical order, with the exception of the National Film Board and the Dominion Bureau of Statistics which appear at the end of each listing with which they are concerned, except where they are the major source.

## Sources for Federal Data

## Subject

Sources for Provincial Data

Dept. of Agriculture
Information Division
Dept. of Defence Production Information Division
Dept of Energy, Mines and Resources Public Relations and Information Services
Dept. of Finance
Information Service
Dept. of Fisheries
Information and Consumer Service
Dept. of Forestry and Rural Development
Information and Technical Services Division
Dept. of Indian Affairs and Northern Development
Information Services Division
Dept. of Industry Information Division
Dept. of Manpower and Immigration Information Service
Dept. of National Health and Welfare Information Services
Dept. of National Revenue
Taxation Division. Information Service
Dept. of Trade and Commerce
Trade Publicity Branch
National Library
Queen's Printer (Canada Gazelle. Statules of Canada, etc.)
National Film Board (films, filmstrips, photographs on all subjects)
Dominion Bureau of Statistics


Dept. of Agriculture
Information Division
Canadian Wheat Board
Central Mortgage and Housing Corporation (mortgage loans for farm houses)
Dept. of Finance (farm improvement loans)
Dept. of Forestry and Rural Development
Information and Technical Services Division (information on Agricultural and Rural Development Administration)
Dept. of Industry
Machinery and Heovy Equipment Branch
Dept. of Manpower and Immigration
Dept. of Trade and Commerce
Agriculture and Fisheries Branch
Dept, of Veterans Affairs (veterans farm loans)
Farm Credit Corporation (mortgage Joans: Farm Machinery Syndicates Credit Act loans)
National Regearch Council
Prairie Regional Laboratory. Saskatoon. Sask. (utilization of crops and crop products)
Queen's Printer (agent for FAO publications)
National Film Board
Dominion Bureau of Statistics


For broad general information in regard to particular provinces, application should be made to: Nfld., Dept. of Provincial Affairs; P.E.I., Tourist and Information Bureav; N.S., Dept. of Provincial Secretary: N.B., Dept. of Natural Resources, Travel Bureau: Que., Dept. of Industry and Commerce, Bureau of Statistics, or Dept. of Tourism, Game and Fish: Ont., Dept. of Economica and Development, or Dept. of Tourism and Information: Man., Dept. of Industry and Commerce or Dept. of Provincial Secretary: Sank., Dept. of Industry and Information or Executive Council; Alta., Government Publicity Bureau; B.C., Dept. of Industrial Development. Trade, and Commerce, Bureau of Economics and Statistics.

Nffid.:-Dept. of Mines, Agriculture, and Resources
P.E.I., N.S., N.B., Sask., Alta., B. $C_{s:-D}$ Depts. of Agriculture

Que.:-Dept. of Agriculture and Colonization. Information and Research Branch
Dept, of Indostry and Comnerce, Bureau of Statistics
Ont.:-Dept. of Agriculture and Food. Farm Economies and Statistics Branch and Information Branch
Man.:-Dept. of Agriculture and Conservation

## Sources for Federal Data

Subject
Sources for Provincial Data
Dept. of Indian Affairs and Northern Development
Information Services Division
Dept, of Energy, Mines and Resources
Polar Continental Shelf Project
Observatories Branch
Geological Survey of Canada
Surveys and Mapping Branch
Geographical Branch
Marine Sciences Branch
Dept. of National Defence
Information Service
Defence Research Board
Dept. of National Health and Welfare
Dept. of Public Works
Operations Directorate
Planning Directorate
Dept. of Transport (airports, weather stations, navigation, supply)
Information Services
Fisheries Research Board of Canada National Research Council

Division of Building Research (permafrost, buildings in the North, snow and ice)
National Film Board

National Arts Centre
Netional Gallery of Canada (collections, exhibitions of works of art)
Canada Council
Dept. of Indian Affairs and Northern Development
Northern Administration Branch (Eskimo arts-visual only)
Dept. of Secretary of State
National Library (books)
Queen's Printer (National Gallery exhibition catalogues, reproductions of paintings, coloured slides, etc.)

Nfld.:-Dept. of Provincial Affairs P.E.I.,-Dept. of Education
N.S.:-Dept. of Provincial Secretary
N.B.:-Dept, of Provincial Secretary, Travel Bureau
Que.t-Dept. of Cultural Affairs
Ont.:-Province of Ontario Council for the Arts
Man.:-Manitoba Arts Council
Sask.:-Saskatchewan Arts Board (Education)
Alta.:-Dept. of Provincial Secretary, Cultural Development Branch
B.C.:-Dept. of Education, Community Programmes Branch

Atomic Energy of Canada Limited (research studies. sale of radioisotopes)
Atomic Energy Control Board (policy, regulations)
Dept. of Energy, Mines and Resources
Ceological Survey of Canada Mines Branch
Eldorado Mining and Refining Limited
Queen's Printer (agent for International Atomic Energy Agency publications)

## ATOMIC

Dept. of Transport
Civil Avaiation Branch (control; licensing: airports end air navisation facilities)
Information Services
Air Canada
Dept, of Defence Production
Aerospace Branch
Dept. of Energy. Mines and Resources
Legal Surveys and Aeronautical Charts Division
Dept. of Industry
Aerospace Branch
N.S.:-Dept. of Trade and Industry Ont:-Dept. of Energy and Resources Management
The Hydro-Electric Power Cornmission of Ontario
Man.:-Dept. of Industry and Commerce. Manitoba Development Authority, Manitoba Research Council
University of Manitoba, Physics Dept.
Sask.:-University of Saskatchewan
Alta.:-Alberta Research Council
B.C.t-University of British Columbia

Que.:-Quebec Government Air Services
Ont.i-Dopt. of Lands and Forests, Forest Protection Branch

## Sources for Federal Data

Dept. of National Defence Information Service
Dept. of National Health and Welfare Civil Aviation Medicine Division
Dept. of Trade and Commerce Industrial Materials Branch
National Research Council
National Aeronauticel Establishment
Queen's Printer (agent for International Civil Aviation Organization publications)
National Film Board
Dominion Bureau of Statistics

## Bank of Canada

Industrial Development Bank
Central Mortgage and Housing Corporation
Dept. of Finance (for banking; also small business loans)
Dept. of Insurance (for trust and loan business; also administers the Small Loans Act)
Post Office Department, Savings Bank
Dominion Bureau of Statistics

Dept. of Registrar General Superintendent of Bankruptcy Dominion Bureay of Statistics Cainal Library (information re in Canadian libraries; national bibliographies of other countries)
National Gallery of Canada (information on art books and periodicals)
National Research Council
National Science Library (information re identification and location of scientific serials and research reports)
Queen's Printer (Official Classification of Canadian Government Publications)
Dominion Bureau of Statistics
Information Division (for atatistical publications)

## Subject

## Source: for Provincial Data

## AVIATION—concl.

## BANKING <br> Trust and Loan <br> Companies Foreign Exchange


$\left\{\begin{array}{l}\text { Ned.:-Dept. of Justice } \\ \text { P.E.I., N.S. N.B., Alta., B.C.t- } \\ \text { Depts. of Attorney General }\end{array}\right.$
Que.:-Minister of Justice
Ont.:-Dept. of Financial and Commercial Affairs
Man., Sank.t-Depts, of Provincial

## Nfld.:-Dept. of Education

Public Libraries Board
Dept. of Provincial Affairs, Atchives
P.E.1.:-Dept. of Education

Legislative Librarian
N.S.+ N.B.:-Depts. of Education. Provincial Librarians
Que.:-Office of Provincial Secretary Provincial Archives
Provincial Library
Dept. of Cultural Affairs
Ont.:-Dept. of Education. Provincial Library Service
Legislative Library
Mansis-Dept. of Educstion. Pro vincial Librarian.
Satk.:-Provincial Library Legislative Library
Alta.:-Dept. of Provincial Secretary Provincial Library and Archives
B.C.:-Dept. of Provincial Secretary

Provineial Library and Archives
Public Library Commission

## Sources for Federal Data

Subject
Sources for Provincial Data

| BIRTHS |
| :---: |
| See "Vital Statistics" |

Dept. of National Health and Welfare Dept. of Indian Affairs and Northern Development (Y.T. and N.W.T.)


Sources same as for "Old Age Assistance"

## BROADCASTING

See "Radio" and "Television"

Central Mortgage and Housing Corporation (NHA financing. house designs. building stand: ards)
Canadian Government Specifications Board
Canadian Standards Association
Dept. of Finance (Farm Improvement Loans Act; Small Businesses Loans Act)
Dept. of Indian Affairs and Northern Development
Northern Administration Branch
Dept. of Industry
Materials Branch
Weod Products Branch
Dept, of Manpower and Immigration
Employment Stabilization Branch (Do-it-now program and municipal winter works)
Dept. of National Health and Welfare Hospita! Design Divition
Dept. of Public Works
Design Directorate
Dept. of Transport
Air Services Construction Branch (airport terminal buildings. ete.)
of Veterans Affairs Soldier
Dept. of Veterans Affairs (Soldier Settlement and Veterans' Land Act)
Farm Credit Corporation
National Research Council
Division of Building Research
Dominion Bureau of Statistics

## BUILDING CONSTRUCTION

Dept. of Trade and Commerce Industrial Materials Branch
Dept. of Industry
Chemicals Branch
Dominion Bureau of Statistics

## CHEMICALS

Nfid., N.B.:-Depts. of Public Works P.E.I.;-Dept. of Industry and Natural Resources
N.S.:-Dept. of Trade and Industry

Que, 2-Farm Credit Bureau, Family Housing Division
Dept. of Industry and Commerce. Bureau of Statistics
Ont.:-Dept. of Labour, Factory Inspection Branch
Ontario Housing Corporation
Dept, of Public Works
Dept. of Municipal Affairs, Community Planning Branch
Man.:-Dept. of Industry and Commerce
Sazk.:-Dept. of Labour
Alta, ;-Dept. of ]ndustry and Development. Alberta Bureau of Statistics
Dept of Labour
B.C.:-Dept. of Industrial Development. Trade, and Commerce. Bureau of Economics and Statistics

Que.:-Dept. of Natural Resources
Ont:- Ontario Research Foundation
Man:-Dept, of Industry and Commerce. Manitoba Development Authority
B.C.:-British Columbia Research Council

Dept. of Secretary of State
Citizenship Registration Branch National Film Board

CITIZENSHIP
See olso
"Population"

Ont.:-Dept. of Provincial Secretary and Citizenship

## Sources for Federal Data

Subject
Sources for Provincial Datan

$\left.\begin{array}{c}\text { Dept. of Registrar General } \\ \text { Director of Investigation and } \\ \text { Research } \\ \begin{array}{c}\text { Restrictive Trade Practices Com- } \\ \text { mission }\end{array}\end{array}\right\} \quad$ COMBINES

Dept. of Transport
Telecommunications and Electronics Branch (radio mids, aeronautical and marine navigation)
Information Services
Meteorological Branch
Board of Transport Commissioners (regulation of certain telegraph and telephone companies)
Canadian Broadcasting Corporation
Canadian Overseas Telecommunication Corporation
Dept. of Indian Affairs and Northern Development
Northern Administration Branch (Y. T. and N.W.T.)

Dept. of industry
Electrical and Electronics Branch
Queen's Printer (agent for International Telecommunication Union publications)
Dominion Bureau of Statistics

COMMUNICATIONS

See also "Postal Service"
(Nfid,t-Dept. of Economic Development
Board of Public Utilities Commissioners
P.E.I.:-TTourist and Information Bureau
Dept. of Public Works
N.S.--Board of Commissioners of Public Utilities
N.B.:-Dept. of Provincial Secretary. Travel Bureau
Que.:-Dept. of Transportation and Communications
Ont.:-Ontario Telephone Service Commission
Ontario Provincial Police, Radio Communications Branch
Man.t-Manitoba Telephone System
Mank.:-Saskatchewan Government
Telephones
Alta.:-Alberta Government Telephones
B.C.:-Dept. of Commercial Transport

## Sources for Federal Data

## Subject

## Sources for Provincial Data

Nfld.:-Dept. of Municipal Affairs and Supply
Dept. of Community and Social Development
P.E.I., N.S., N.B.:-Depts. of Municipal Affairs
Que.:-Dept. of Municipal Affairs
Industrial Development Bureau
Economic Advisory Council
Ont.:-Dept. of Municipal Affairs, Community Planning Branch
Dept, of Education. Community Programmes Branch
Man.:-Dept. of Municipal Affairs. Planting Branch
Sask.:-Dept, of Municipal Afairs. Community Planning Branch
Executive Council. Economic Advisory and Planning Board
Centre for Community Studies, University of Saskatchewan
Alta,t-Dept. of Municipal Affairs, Town and Rural Planning Branch
B.C.:-Dept. of Municipal Affairs. Regional Planning Division
Lower Mainland Regional Planning Board

Nfld.:-Dept, of Mines, Agriculture, and Resources
P.E.I.:-Dept. of Industry and Natural Resources
N.S., Alta.:-Depts. of Lands and Forests
N.B.:-Dept. of Lands and Mines

Que.:-Dept. of Lands and Forests
Dept. of Tourism. Game and Fish
Dept. of Natural Resources
Ont.:-Dept. of Energy and Resources Management, Conservasources Management, Conserva-
tion Authorities Branch
Ontario Agricultural College. Guelph
Man.z-Dept. of Mines and Natural Resources
Sapk. 9 -Dept. of Natural Resources Dept. of Agriculture, Conservation and Development Branch
B.C.:-Dept. of Lands, Forests and Water Resources
Dept. of Recreation and Conservation


Privy Council Office
Dept. of Justice
Dept. of Registrar General
(Great Seal of Canada, etc.)
$D_{\text {ept. of Secretary of Stite }}$
Library of Parliament
Public Archives
Queen's Printer (Statutes of Conada, Hansard. Organization of the Government of Canada Handbook, etc.)

Subjact

## Sources for Provincial Data

Nfld.:-Dept. of Mines, Agriculture, and Resources
P.E.I., N.S.:-Depts. of Provincial Secretary
N.B.:-Dept. of Agriculture

Que.:-Dept. of Agriculture and Colonization
Dept. of Industry and Commerce. Bureau of Statistics
Ont.:-Dept. of Agriculture and Food. Co-operatives Branch
Man.:-Dept. of Agricultare and Conservation, Co-operativeServices Branch
Treasury Dept., Superintendent of Insurance
Sack: :-Dept. of Co-operation and Co-operative Development
Alta.:-Dept. of Industry and Development. Co-operative Activities Branch
B.C.:-Attorney-Ceneral's Dept., Registrar of Companies

Dominion Bureau of Statistics
(wholesale and retail prices and consumer price index)

COST OF LIVING

Nfld.:-Dept. of Municipal Affairs and Supply
Ont.:-Dept. of Economics and Development
Man.:-Dept. of Industry and Commerce. Business Research Branch
Sask.:-Dept. of Labour
Alta.:-Dept. of Industry and Development. Alberta Bureau of Statistics
B.C.:-Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Canada Council
Dept. of Jndian Affairs and Northern Development
National and Historic Parks Branch
Northern Administration Branch Dept. of Industry

National Design Branck
Dept. of Manpower and Immigration
Canada Immigration Division
Dept, of Veternns Affairs (veterans only)
National Gallery of Canada (reference library. flms)
National Library (books)
Public Archives
Queen's Printer (UNESCO coloured slides)
National Film Board

Nfld.:-Dept. of Education
P.E.I.:-Dept. of Tourist Development
Dept. of Education, Physical Fitness Division
N.S.:-Dept. of Trade and Industry. Handicrafts Division
Nova Scotia College of Art
N.B.:-Dept. of Finance and Industry
Que::-Dept. of Cultural Affairs
Dept. of Agriculture and Colonization
Ont.:-Dept. of Education. Community Programmes Branch
Dept. of Agriculture and Food, Home Economics Service
Ontario Cift Foundation
Mant:-Dept. of Agriculture and Conservation, Extension Service
Manitobe Development Authority
Sask.:-Dept. of Education, Continuing Education Branch
Saskatchewan Arts Board
Alta.z-Dept. of Provincial Secretary
Alta. t-Dept. of Provincial Mecretary handicrafts)
Dept. of Education, Community Programmes Branch

## Sourcen for Federal Data

Subject

## Sources for Provincial Data

|  |  |
| :---: | :---: |
| Dept, of Solicitor General <br> Canadian Penitentiary Service |  |
| National Parole Board |  |
| Royol Canadian Mounted Police | CRIME AND |
| Cepto of | DELINQUENCY |
| Dept. of National Health and Welfare Research and Statistics Division |  |
| National Film Board <br> Dominion Bureal of Statistics |  |

All Provinces except Nfld.:-Depts. of Attorney General
NAd.:-Dept. of Justice
Dept. of Public Welfare
N.S., Alta.:-Depts. of Public Welfare
P.E.I., Sask.:-Depts. of Welfare Que: Dept. of Family and Social Welfare.
Dept. of Youth
Dept, of Industry and Commerce. Bureau of Statistics
Ont.;-Dept. of Reform Institutions
B.C.:-Dept. of Social Welfare

See pp. 142-150 of this volume for a list of Crown corporations giving the functions of each and the Cabinet Minister through whom each reports to Parliament.

## CROWN COAPORATIONS

For information with regard to individual Crown corporations apply as follows:-
Nfid.:-Dept. of Justice
Dept. of Public Works
P.E.1.:-Dept. of Industry and Natural Resources
N.S.:-Dept. of Trade and Industry N.B.:-Dept. of Finance and $\mathrm{Jn}_{\mathrm{n}}$ dustry, Treasury Board
Ont.:-Dept. of Provincial Secretary
Man.:-Treasury Dept:
Dept. of Public Utilities
Sazk.:-Government Finance Office Alta.:-Dept. of Industry and Development
B.C.:-Attorney-General's Dept.

Bank of Canada
Dept. of Finance
Royal Canadian Mint


Canadian Dairy Commission
Dept, of Industry
Food Products Branch
Dept. of Trade and Cominerce
Agriculture and Fisheries Branch
National Film Board
Dominion Bureau of Statistics

Dairy Products Division
Health of Animals Branch
Research Branch
Animal Research Institute Food Resees rch Institute


Nfl.:-Dept. of Mines, Agriculture. and Resources
P.E.I., N.S.:-Depts. of Agriculture
N.B., Ont., Alta., B.C.;-Depts. of Agriculture. Dairy Branches (also Milk Industry Board of Ont. and Milk Control Board for B.C.)
Que.:-Dept. of Agriculture and Colonization. Dairy Products Branch
Dept. of Industry and Commerce. Bureau of Statistics
Man:i-Dept. of Agriculture and Conservation, Dairy Branch
Sakk.:-Dept. of Agriculture. Animal Industry Branch
Milk Control Board

DEATHS
See "Vital Statistics"

## DEFENCE

See also "Civil Defence"

Sources for Federal Data

Dept. of National Health and Welfare
Dept. of Indian Affairs and Northern Development (Y.T, and N.W.T.)
Dept. of Veterans Affairs (war disabled veterans)

Economic Council of Canada
Dept. of Finance
Dept. of Manpower and Immigration Program Evaluation Branch
Dept. of Secretary of State (financial support to post-secondary education)

Bank of Canada
Central Mortgage and Housing Corporation
Dept. of Agriculture
Economics Branch
Dept. of Defence Production
Economics and Statistics Branch
Dept. of Energy, Mines and Resources
Mineral Economics Division
Dept. of Finance
Financial Affeirs Division
Dept. of Fisheries
Economics Service
Dept. of Forestry and Rural Develapment
Information and Technical Services Division
Dept. of Indian Affairs and Northern Development
Administration Services
Northern Administration Branch
Northern Co-ordination and Research
Dept. of Industry
Program Advisory Group
Dept. of Labour
Economics and Research Branch
Dept. of Manpower and Immigration Research Branch
Dept. of National Health and Welfare
Research and Statistics Directorate
Dept. of Public Works
Planning Directorate
Dept. of Trade and Commerce Econormics Branch
Dept. of Transport
Economic Policy and Research Branch
Fisheries Research Board
Public, Archives (early data)
Queen's Printer (agent for ÚNESCO, Commonwealth Economic Committee and OECD publications)
Special Planning Secretariat, Privy Council Office, Ottawa
Dominion Bureau of Statistics

Subjoct
Sources for Provincial Data
Nfld:-Dept. of Public Welfare,
P. The Old Age Assistance Board of Disabled Persons Allowances
N.S.:-Old Age Assistance Board
N.B.:-Dept. of Youth and Welfare. Director of Disabled Persons Allowances
Que.t-Dept. of Fannily and Social Welfare. Social Ailowances Commission
Ont:-Dept, of Public Welfare. Welfare Allowances Branch
Man.:-The Old Age Assistance and Blind Persons Allowances Board
Sask-2-Dept, of Welfare, Director of Public Assistance
Alta.:-Dept. of Public Welfare, Pensions Board
B.C.:-The Disabled Persons Allowances Board
Nfld.:-Dept. of Economic Development
N.S.s-Dept. of Finance and Economics
Ont-f-Dept. of Economics and Development
Man.:-Dept of Municipal Affairs, Planning Branch
Dept. of Industry and Commerce
Sask.:-Dept, of Industry and Commerce
Alta.:-Dept. of Industry and Development

Nfld.:-Dept. of Economic Development
Dept. of Community and Social Development
P.E.1.:-Dept. of Industry and Natural Resources
N.S.:-Dept. of Trade and Industry Nova Scotia Research Foundation
N.B.:-Dept. of Finance and Industry
Que.:-Dept. of 1ndustry and Commerce. Economic Research Bureau, Bureau of Statistics. Industrial Commission Branch
Ont.:-Dept. of Economics and Development
Dept. of Agriculture. Farm Economics and Statistics Branch
Dept. of Municipal Affairs. Community Planning Branch
Alcoholism and Drug Addiction Research Foundation of Ontario
Man.:-Dept. of Industry and Contmerce, Business Research Branch
Manitoba Development Anthority
Manitoba Economic Consultative Board
Treasury Dept., Economic Research Division
Dept. of Agriculture and Conser* vation, Economic Division
Sack.:-Executive Council
Economic Advisory and Planning Board
Dept. of Industry and Commerce
Dept. of Co-operation and Co. operative Development, Re search and Statistical Divition
Centre for Community Studies, University of Saskatchewan
Alta.:-Dept. of Industry and Dee velopment
B.C.:-Dept. of Industrial Development, Trade and Commerce, Bureaut of Economics and Statistica

Subject
Sources for Provincial Data

Dominion Bureau of Statistics
Canada Council
Canadian Broadcasting Corporation (educational broaccests)
Dept. of Finance (university grants; student loans)
Dept. of Fisheries
Information and Consumer Service
Dept. of Forestry and Rural Development
Information and Technical Services Division
Dept. of Indian Affairs and Northern Development
Northern Administration Branch (Y.T. and N.W.T.)

Dept. of Manpower and Immigration Manpower Training Branch
Dept. of National Defence
Director of Education (eervice dependants' schools)
Dept. of National Health and Welfare
Dept. of Veterans Affairs (veterans and children of war dead)
National Capital Commission
Information and Historical Division
National Gallery of Canada (lectures, tours, films)
National Research Council
Division of Administration and Awards (science and engineering students registered in Canadian graduate schools)
Queen's Printer (agent for UNESCO publications)

## EDUCATION

See also
"Motion Pictures"
and "Photographic Material"

All Provinces:-Depts. of Education (technical, visual, audio and all other phases of education)

Additional:-Alta.:-Dept. of Labour. Apprenticeship Board
B.C.:-Dept. of Labour, Director of Apprenticeship

Chief Electoral Office
Library of Parliament
Public Archives


Dedt. of Energy, Mines and Resources
Water Resources Branch
Dept. of Industry
Area Development Agency
National Energy Board
National Research Council
Radio and Electrical Engineering Division
Northern Conada Power Commission
National Film Board
Dominion Bureau of Statistics

Nfld. :-Newfoundland and Labrador Power Commission
P.E.1.:-Public Utility Commission N.S., Alta.: Power Commissions N.B.:-New Brunswick Electric Power Commission
Que.:-Hydro-Electric Commission Dept. of Natural Resources
Dept, of Agriculture and Colonization, Rural Electrification Bureau
Ont.:-Dept. of Energy and Resources Management
The Hydro-Electric Power Commission of Ontario
Man.:-Manitoba Hydro
Dept. of Public Utilitios
Sask.t-Saskatchewan Power Cor-
B.C.:- Boration Critish Columbia Hydro and

NGd., N.S., N.B., Sask,-Depts of Labour
P.E.I.:-Dept. of Labour

Civil Service Commission
Que.:-Dept of Labour, Provincial
Employment Bureau
Ont.:-Dept. of Economics and Development
Dept. of Labour
Dept. of Civil Service
Man-:-Dept. of Labour
Dept. of Induatry and Commerce
Altan:-Dept. of Labour
Dept. of Industry and Development
B.C.:-Dept. of Labour

Dept. of Industrial Development,
Trade. and Commerce. Bureau of Economics and Statistics


NAd.:-Dept. of Labrador Affairs Dept. of Public Welfare
Que.:-Dept. of Natural Resources. New Quebec Branch

Dept. of Trade and Commerce
Canadian Government Exhibition Commission
Trade Fairs and Missions Branch
Trade Publicity Branch
Central Mortgage and Housing Corporation (housing exhibits)
Dept. of Agriculture
Livestock Division
Dept. of Energy, Mines and Resources
Public Relations and Information Services
Mineral Economics Division
Dept. of Fisheries
Information and Consumer Service
Dept. of Indian Affairs and Northern Development
Information Services Division
Dept, of Industry
Information Division
Dept. of National Defence
Directorate of Exhibitions and Displays
Dept. of National Health and Welfare Information Division
Dept. of Secretary of State
Canadien War Museum
National Aviation Museum
National Museum of Canada
National Capital Commission
National Cailery of Cenada
National Film Board

## EXHIBITIONS

Dept. of External Affairs Information Division
Depe. of Labour

## International Labour Branch (lLO; OECD)

Queen's Printer (agent for international organizations publications)

EXTERNAL AFFAIRS
See also "Trade"

NAd.:--Dept. of Provincial Affairs P.E.I., N.S., N.B.t-Depts. of Agriculture
Que.i-Dept. of Agriculture and Colonization
Dept. of Industry and Commerce
Office of Provincial Secretary
Dept. of Cultural Affairs
Ont.:-Most Ontario Departments organize exhibitions
Man:--Dept. of Agriculture and Conservation, Extension Service Dept. of Industry and Commerce Sapl.:-Dept. of Agriculture

Dept. of Industry and Commerce
Alta.:-Dept. of Provincial Secretary
Dept. of Agriculture
Alberta Government Publicity Bureau
B.C.i-Dept. of Agrieultare

Dept. of Industrial Development, Trade, and Commerce

## Subjact

Sources for Provincial Data



FAMILY ALLOWANCES
publications)
National Film Board
Dominion Bureau of Statistics

FIELD CROPS
Nfid. 2-Dept. of Mines, Agriculture. and Resources
P.E.I., N.S., N.B.:-Depts. of Agriculture
Que.:-Dept. of Agriculture and Colonization
Dept. of Industry and Commerce. Bureau of Statistics
Ont.:-Dept, of Agriculture and Food
Man::-Dept. of Agriculture and Conservation, Soils and Crops Branch
Sask.:-Dept. of Agriculture. Plant 1ndusery Branch
Alta.. B.C.:-Depts, of Agriculture, Field Crops Branch

Dept, of Finance
Bank of Canada
Queen's Printer (agent for GATT publications)
Treasury Board
Dominion Bureau of Statistics

## FINANCE

See also "Taxation"

Dept, of Forestry and Rural Development
Information and Technical Services Division (forest fire prevention and forest products fire retardents)
Board of Transport Commissioners (forest-fire protection along railway lines)
Dept. of Indian Affairs and Northern Development
National and Historic Parks Branch
Northern Administration Branch
Dept. of Public Works
Dominion Fire Commissioner
National Research Council
Fire Research Section

All Provinces:-Provincial Fire Marshals (for urban and rural fire losses)
Nfld.:-Dept. of Mines, Agriculture. and Resources
P.E.I.:-Dept. of Public Works
N.S.:-Dept. of Labour
N.B.:-Dept. of Lands and Mines

Dept. of Attomey General
Que.:-Dept. of Lands and Forests, Forest Protection Service
Dept. of Municipal Affairs. Fire Commissioner
Ont.:-Dept. of Lands and Forests, Forest Protection Branch
Dept. of Public Works. Fire Prevention Officer
Dept, of Attorney General, Office of the Fire Marshal
Man.:-Dept, of Mines and Natural Resources
Dept. of Labour. Fire Commissioner
Safk.:-Dept. of Natural Resources
Dept. of Labour, Fire Commissioner
Alta.:-Dept. of Lands and Forests
Dept. of Provincial Secretary
B.C. 2 -Dept. of Lands. Forests and Water Resources

## Sources for Federal Data

## Subject

Sources for Provincial Data
Dept of Fisheries
Information and Consumer Service
Dept. of Finance
Fisheries Improvement Loans Act
Dept. of Indian Affairs and Northern Development
Northern Administration Branch (Eskimo fishing co-operatives)
Dept. of Industry
Food Products Branch
Dept. of Trade and Commerce Agriculture and Fisheries Branch
Dept. of Veterans Affairs (veterans settied as commerical fishermen)
Fisheries Research Board
Queen's Printer (agent for FAO publications)
Unemployment Insurance Commission (insurance for fishermen)
National Film Board
Dominion Bureau of Statistics
Dept. of National Health and Welfare, Food and Drug Laboratory (for standards and methods of control of quality, purity and safety of food and drugs)
Dept. of Agriculture (for inguiries on standards for meat. canned food, fruit honey, maple products, vegetables, dairy products. poultry. ete.)
Dept. of Fisheries (standards for fish products)
Dept. of Industry
Food Products Branch
Dept. of Registrar General
Patent and Copyright Office (licensing of patents)
Dept. of Trade and Commerce
Industrial Materials Branch
Queen's Printer (agent for publications)

FAO

Dept. of Forestry and Rural Development
Information and Technical Services Division
Dept, of Industry
Wood Products Branch
Dept. of Trade and Commerce Industrial Materials Branch
National Film Board (films, filmstrips, photographs. in relation to departmental conservation and development programs)
Dominion Bureau of Statistics

## FISHERIES



Nfld., P.E.I., N.S., N.B.:-Depts. of Fisheries
Que.:-Dept, of Tourism, Game and Fish
Dept. of Industry and Commerce. Bureau of Statistics
Ont.:-Dept. of Lands and Forests, Fish and Widdlife Branch
Man.:-Dept. of Mines and Natural Resources, Fisheries Branch
Sask.:-Dept. of Natural Resources, Fisheries Branch
Alta.:-Dept. of Lands and Forests. Fish and Game Branch
B.C.:-Dept. of Recreation and Conservation
Dept. of Industrial Development, Trade. and Commerce. Bureau of Economics and Statistics

All Provinces:-Depts. of Heteh (sanitary inspection of food supplies)

## FOREIGN AFFAIRS <br> See <br> "External Affairs"

FOREST
RESOURCES
AND
INDUSTRIES

FUEL See "Coal", "Oil and Natural Gas" and "Electric Power"

Nfld.:-Dept. of Mines, Agriculture. and Resources
P.E.I.:- Dept. of Industry and Natural Resources
N.S., Que., Ont., Alta.:-Depts. of Lands and Forests
N.B.:-Dept. of Lands and Mines

Man.t-Dept. of Mines and Natural Resources. Forestry Branch
Sask.:-Dept. of Natural Resources. Forestry Branch
Dept. of Industry and Information Sepkitchewan Timber Board
B.C. :-Dept. of Lands, Forests and Water Resources
Dept. of Industrial Develogment. Trade. and Commerce, Bureau of Economics and Statistics

## Sources for Federal Data

Subject
Sources for Provincial Data

NAd.:-Dept. of Mines. Agriculture, and Resources
Dept. of Economic Development
P.E.I., N.S., N.B., Alta., B.C. Depts. of Agriculture
Que,:-Dept. of Agriculture and Colonization
Dept. of Industry and Commerce, Bureau of Statistics
Ont. - -Dept. of Lands and Forests
Man,:-Dept. of Mines and Natural
Resources, Game Branch
Sask.:-Dept, of Natural Resources Saskatchewan Fur Marketing Service

Nfld. 2-Dept, of Mines, Agriculture, and Resources
P.E.I. $:$-Travel Bureau
N.S. :-Dept. of Mines
N.B.t-Dept. of Lands and Mines

Que,:-Dept. of Lands and Forests Dept. of Industry and Commerce. Economic Research Bureau, Drafting Division
Dept. of Natural Resources
Northerm Studies Centre, Laval University
Ont.i-Dept. of Lands and Forests, Lands and Surveys Branch
Dept. of Mines
Ontario Agricultural College
Dept. of Economics and Development
Maniz-Dept. of Mines and Natural Resources
Sask.:-Dept. of Natural Resources Dept. of Industry and Commerce
Alta.:-Dept. of Lands and Forests
University of Alberta
Dept, of Highways, Surveys Branch
B.C.:-Dept. of Lands, Forests and Water Resources
NAd.:-Dept. of Mines, Agriculture. and Resources
P.E.I.:-Dept. of lndustry and Natural Resources
N.S.:-Dept. of Mines
N.B.:-Dept, of Lands and Mines

Que.:-Dept. of Natural Resources. Geological Surveys Branch
Ont.:-Dept. of Mines, Geological Branch
Man.:-Dept. of Mines and Natural Resources, Mines Branch
Sask, - Dept. of Mineral Resources
Alta.:-Dept. of Mines and Minerals
University of Alberta
B.C.:-Dept. of Mines and Petro leum Resources
Dopt. of the Secretary of State (federal-provincial channel of communication)
Chief Electoral Office (Electoral Act and voters lists)
Dept. of Indian Affairs and Northern Development (Y.T. and N.W.T.)
Library of Parliament
Privy Council Office (appointments. orders in council. statutory orders and regulations)
Public Archives (early official records)
Public Service Commission (staffing the Public service)
Queen's Printer (distribution and sale of statutory orders and regulations)

## GOVERNMENT

## For Senate and

 House of Commons of Canada see "Parliament"Nfld:-Dept. of Provincial Affairs P.E.I., N.S., N.B., Ont., Man., Sask., Aita., B.C.:-Depts. of Provincial Secretary
Que.:-Office of Provincial Secretary

Subjact
Sources for Provincial Data

Dept. of National Health and Welfare Queen's Printer (agent for WHO publications)
National Film Eoard
Dominion Bureau of Statistics

Public Archives
Dept. of Indian Affairs and Northern Development
National and Historic Parks Branch Government of the Northwest Territories
Dept. of National Defence
Directorate of History
Dept, of Secretary of State
Canadian War Museum
National Aviation Museum
National Museum of Canada
Dept. of Veterans Affairs (war memorials and war cemeteries)
National Capital Commission (Information and Historical Division)
National Gallery of Canada (historical paintings: war collections)
National Film Board
Dominion Bureau of Statistics

Dept. of Agriculture
Production and Marketing Branch (grading and inspection)
Fruit and Vegetable Division Plant Products Division Plant Protection Division
Research Branch Plant Research Institute
Queen's Printer (agent for FAO publications)

Dept. of National Health and Welfare
Dept. of Indian Affairs and Northern Development.
Northern Administration Branch (Y.T. and N.W.T.)

Dept. of National Defence
Office of the Surgeon (National Defence Centre)
Dept, of Veterans Affairs (veterans hospitale)
Queen's Printer (agent for WHO publications)
Dominion Bureau of Statistics

HEALTH
for Health of
Veterans see "Veterans

AHtairs"


HOSPITALS AND HOSPITAL INSURANCE

Nfid., P.E.I., N.B., Que.; Ont., Man.z-Depts, of Health N.S. Alta. :-Depts. of Public Health
Sask.:-Dept. of Public Health
Saskatchewan Medical Care Commisoion
B.C. ${ }^{2}$-Dept. of Health Services and Hospital Insurance

Nfld. t-Lesislative Library
Memorial University
Gosling Memorial Library
Dept. of Provincial Affairs. Public Archives and Museurn
P.E.I.:-Travel Bureau. Legistative Librarian
N.S.:-Public Archives
N.B. :-Dept. of Education

Legislative Library.
Que: :-Office of Provincial Secretary. Provincial Archiven
Provincial Library
Dept. of Cultursl Affaizs
Ont.:-Legislative Library
Dept. of Tourism and Information. Historical Branch
Dept of Public Records and Archives
Man.:-Provincial Library and Archives
Sank.:--Legislative Library, Archives Division
Alta.:-Archives, Provincial Library
Dept. of Provincial Secretary. Museum Branch
B.C.:-Dept. of Provincial Secretary. Provincial Libravian and Ar* chivist

Nffid.t-Dept. of Mines, Agriculture. and Resources
P.E.I.:-Dept. of Agriculture
N.S., N.B., Alta., B.C. $i-$ Depts. of Agriculture, Horticultural Branches
Que,:-Dept. of Agriculture and Colonization, Horticultural Branch
Ont.:-Dept. of Agriculture and Food
Man.:-Dept. of Agriculture and Conservation
Sask.:-Dept. of Agriculture, Plant Industry Branch

NAld., N.B., Qu*.:-Depts. of Health
P.E.I., Ont.:-Hospital Services Commission
N.S.:-Hospital Insurance Commis-Man.r--Manitoba Hospital Commission
mission
Alta.:-Depts. of Public
Health
B.C. $\%$ Deptr of Health Services and Hospital Insurance

## Sourcet for Federal Data

## Subject

## Sources for Provincial Data

Central Mortzage and Housing Corporation (National Housing Act financing: loans and subsidies for housing)
Dept. of Indian Affairs and Northern Development
Northern Administration Branch (Eskimo housing)
Dept. of Veterans Affairs (home construction assistance for vetcrans)
National Research Council
Division of Building Research (construction materials, building codes and practice, soil and snow mechanies, housing standards)
Dominion Bureau of Statistics
Nfid., P.E.1.t-Dept. of Municipal
N.S.:-Nova Scotia Housing Cornmission
Que.:-Dept. of Agriculture and Colonization. Quebec Farm Credit Bureau
Ont.:-Ontario Housing Corporation
Man.t-Dept. of Industry and Commerce
Manitobe Housing Commission
Sask,--Dept of Social Welfare. Housing Branch
Alta.:-Dept. of Industry and Development, Commercial Branch
B.C.:-Dept. of Finance. Housing Commissioner
P.E.I.:-Dept. of Industry and Natural Resources
Ont.t-Dept. of Economics and Development, Immigration Branch
Man.:-Dept. of Industry and Commerce. Immigration Branch
Sask.:-Dept. of Social Welfare
Alta.:-Dept. of Industry and Der velopment
B.C.:-British Columbia House. London. England and San
Francisco, Cathfornia Francisco, Calfornia

INCOME TAX
See "Taxation"

Dopt. of Registrar General Corporations Branch


OF COMPANIES AND ASSOCIATIONS


NEI.t-Dept. of Public Welfare (Indians in Labrador)
Dopt. of Labrador Affairs
Que.:-Dept. of Tourism. Game and Fish
Ont.:-Dept, of Public Wolfare
Man. :-Dept. of Welfare Community Development Branch
Saak. 1-Provincial Committee on Minority Groups
Executive Council
Alta.:-Dept. of Industry and Development, Community Development Branch
B.C.:-Dept. of Labour, Provincial Advisory Committee on Indian Affairs

Dept of Industry
National Design Branch
Dept. of Registrar Genaral
Patent and Copyright Office


Man.:-Dept. of Industry and Commerce. Menitobe Design

## Sources for Federal Data

Subject
Sources for Provincial Data
Dept. of Insurance (Canadian. British and foreign companies, Federal Public Service insurance)
Central Mortgage and Housing Corporation (insures loans made under National Housing Act)
Dept. of Agriculture (crop insurance)
Dept. of Labour
Industrial Pensions and Annuities Branch
Dept, of Trade and Commerce
Export Credits Insurance Corporation
Dept. of Veterans Affairs
Veterans Welfare Services
Dominion Bureau of Statistics (oummary statistics of all types of insurance)

Dept. of Energy. Mines and Resources
Mines Branch
Mineral Economics Division
Dept. of Industry
Materials Branch
Dept. of Trade and Commerce
Economics Branch
Industrial Materials Branch
Dominion Bureau of Statistics

> INSURANCELIFE, FIRE, ETC.
> For Unemployment Insurance see "Labour" ond for Hospital Insurance "Hospitals and Hospital Insurance"

Ned.:-Dept. of Provincial Affairs
P.E.I., N.S., N_B., B.C.t-Superintendents of Insurance
Que.:-Finance Dept., Insurance Branch
Ont.:-Dept. of Insurance
Man.:-Superintendent of Insurance Manitoba Crop Insurance Agency
Sack: :--Superintendent of Insurance. Government Insurance Offe
Alta.:-Dept. of Provincial Secretary, Supervisor of Insurance

IRON AND STEEL
Nfld.:-Dept, of Mines, Agriculture and Resources
N.S., -Dept. of Mines

Research Foundation
N.B.:-Dept. of Lands and Mines

Que.:-Dept. of Industry and Commerce, Bureau of Statistics
Dept. of Natural Resources
Ont.:-Dept. of Economics and Den velopment, Trade and Industry Branch and Office of the Chief Economist
Manit-Dept. of Mines and Natural Resources
Dept. of Industry and Commerce
Sask.:-Dept. of Mineral Repources
Alta.:-Dept. of Mines and Minerals
Dept. of Industry and Development
Research Council of Alberta
B.C.:-Dept. of Mines and Petroleum Resources
Dept of Industrial Development, Trade, and Commerce. Bureau of Economics and Statistics

Dept. of Justice
Dept, of Indian Affairs and Northern Development (Y.T, and N.W.T.)
Queen's Printer (agent for International Court of Justice publications)
Dominion Bureau of Statistics

Dept. of Labour
Cenada Labour Relations Board
Conciliation and Arbitration Branch (conciliation of labour disputes)
Economics and Research Branch
Employee Representation Branch (certification of bargaining agents)
Fair Employment Practices Branch (promotion of fair employment practices)
Information Services Branch
International Labour Affairs Branch
Labour-Management Consultation Branch (promotion of labourmanagement co-operation)
Labour Standards Branch
Legislation Branch
Library Services Branch
Women's Bureau


All Provinces except Nfld. and $\underset{\text { Que.:-Depts. of Attorney }}{\text { Qeneral }}$ Nfld. :-Dept. of Justice Que:-Minister of Justice

LABOUR, WAGES AND WORKING CONDITIONS

[^394]
## Sources for Federal Data

Dept. of Indian Affairs and Northern Development(Y.T. and N.W.T.) Indian Affairs Branch
Dept. of Manpower and Immigration Canada Manpower Division
Canada Immigration Division
Dept. of National Health and Welfare (occupational health)
National Research Council
Division of Administration and Awards (recruitment and salary levels of scientific and technical personnel)
Qaeen's Printer (agent for International Labour Office publications)
Unemployment Insurance Cornmission
Dominion Bureau of Statistics

Dept. of Energy. Mines and Resources
Surveys and Mapping Branch
Dept. of Agriculture
Prainie Farm Rehabilitation Ad. ministration
Dept. of Indian Affairs and Northern Development
Northera Administration Branch (Y.T. and N.W.T.)

Indian Affairs Branch
Dept. of Manpower and Immigration Canada Immigration Division
Dept, of Veterans Affairs
Veterans Land Administration
Public Archives (early data re settlement)

Dept. of Solicitor General
Royal Canadian Mounted Police (Enforcest Federal Slatudes in all parts of Conada; in the provinces, exclustoe of Quebec and Ontario. it carries out, zunder contract. enforcement of the Criminal Code and Prooinclal Statutes and polices a nutrber of municioalities; is the only lauoenforcement body in the Y.T. and N.W.T.)

Subject
Sources for Provincial Data

Ont.:-Dept. of Labour
Dept. of Economics and Development
B. C. :-Dept of Labour

Dept. of Industrial Development. Trade, and Commerce. Bureau of Economics and Statistics

## LANDS AND LAND SETTLEMENT

## LABOUR, WAGES AND WORKING CONDITIONSconcluded

NAd. --Dept. of Mines, Agriculture and Resources
P.E.I. :-Commissioner of Public Lands
N.S.;-Dept. of Agriculture, Land Settlement Board
N.B.:-Dept, of Lauds and Mines

Que.:-Dept. of Lands and Forests
Dept. of Agriculture and Colonization
Ont.2 Alta.:-Depts. of Lands and Forests
Man.:-Dept. of Mines and Natural Resources, Lands Braneh
Sask.z-Dept. of Agriculture, Lands Branch
Attorney Ceneral, Lend Titles
B.C.:-Dept. of Agriculture, Land Clearing
Dept. of Lands. Forests, and Water Resources

## LAW ENFORCEMENT

Clerk of the Senate of Canada
Clerk of the House of Commons
Dept. of 1ndian Affairs and Northern Development (Y.T. and N.W.T.)
Dept. of Justice
Library of Parliament
Privy Council Office
Queen's Printer (distribution and sale of the Statutes of Canada and texts of foderal legislation)
For Acts administered by individual Federal Depts., see pp. 151-155 of this volume.

## LEGISLATION

 for Statutory Orders and Regulations see "Government"All Provinces except NAd., P.E.I. Man. and B.C.:-Depts. of Attorney General
Additional:-Ont. and Alta.:Queen's Printer (distribution and sale of the Statutes and various Acts)
Neld.t-Dept. of Justice
P.E.I., B.C.:-Depts. of Provincial Secretary
Man.:-L Legislative Council

## Sourcen for Federal Data

Chief Electoral Office (for local referendum under Canada Temperance Act)
Dept, of Indian Affairs and Northern Development
Northern Administration Branch (Y.T. and N.W.T.)

Dominion Bureau of Statistics

Dept. of Agriculture
Production and Marketing Branch Livestock Division
Health of Animals Branch Contagious Diseasea Division Meat Inspection Division Animal Pathology Division
Research Branch Animal Research Institute
Quean's Printer (agent for FAO publications)
National Film Board
Dominion Bureau of Statistics

Dept. of Industry
Information Division
Industrial Policy Adviser
National Design Branch
Bank of Canada
Industrial Development Bank
Dept. of Defence Production (for defence items)
Dept. of Finance (Small Businesses Loans Act)
Dept. of Registrar General. Corporations Branch
National Research Council
Canadian Patents and Development Limited (utilization of new cientific processes)
Tecbnical Information Service (answering queries from industry on problems of technology and productivity)
National Film Board
Dominion Bureau of Statistics
Dept. of Energy, Mines and Resources
Surveys and Mapping Branch
Marine Sciences Branch
Geological Survey
Geographical Branch
Observatories Brancb
Dept. of Agriculture (soil survey and economic survey maps)
Dept. of Fisheries
Information and Consumer Service (Gisheries maps)
Dept. of Forestry and Rural Development
Information and Technical Services Division (forestry and rural development maps)
Dept, of Tramsport (meteorological maps)
National Capital Commission (tourist and planning maps)
National Research Council
Division of Building Research (Climatological Atlas)
Public Archived (maps relating to history and cartography)
Dominion Bureau of Stetistica (economic and cenuly maps)

Subjack

LIQUOR CONTROL

LIVESTOCK

## MANUFACTURING <br> See also "Crown Corporations"

## MAPS AND

 CHARTS
## Sources for Provincial Data

Nffd:-Board of Liquor Control
P.E.I., Man.:-Liquor Control Commission
N.S.:-Liquor Commission
N.B. Control'Boards, B.C.z-Liquor Control Boards
Que.:-Liguor Board
Saek,t-Liquor Board, Liquor Licensing Commission
Nfld.:-Dept. of Mines, Agriculture, P and Resources
P.E.I., N.B.; Alta,, B.C.:-Depts. of Agriculture. Livestock Branches
N.S. H - Dept. of Agriculture, Animal Husbandry Branch
Que.:-Dept. of Agriculture and Colonization, Animal Products Branch
Dept. of Industry and Commerce Bureau of Statistics
Ont. z-Dept. of Agriculture and Food, Livestock Branch
Man.:-Dept. of Agriculture and Conservation, Livestock Branch
Sask.:-Dept. of Agriculture, Animal Industry Branch
(Nfid.:-Dept. of Economic Development
P.E.I.:-Dept. of Industry and Natural Resources
N.S. z-Dept. of Trade and Industry
N.B.:-Dept. of Finance and Industry
Que.:-Dept, of Industry and Commerce. Bureau of Statistics
Ont.:-Dept of Economics and De: velopment, Office of the Chiel Economist
Man.:-Dept. of Industry and Commerce
Sakk.:-Economic Advisory and Planning Board
Dept. of Industry and Commerce
Altan:-Dept. of lindustry and Development
Alberta Bureau of Statistica
B.C.:-Dept. of Industrial Development. Trade. and Commerce. Bureau of Economics and Statistica
Nfd.:-Dept. of Mines, Agrieulture and Resources
P.E.I.:-Dept of Public Works and Highways
N.S.:-Dept. of Mines

Research Foundation
N.B.:-Dept. of Lands and Mines

Que.:-Dept. of Lands and Forests
Dept. of Natural Resources
Dept. of Indubsry and Commerce, Economic Cartography
Dept of Agriculture and Colonization
Ont.:-Dept. of Mines
Dept. of Lands and Foreste
Dopt. of Highways
Dept, of Tourism and Information
Man.:-Dept. of Mines and Natural Reoources, Survoys Branch
Sask.;-Dept. of Natural Resources Dept. of lindugtry and Commerce
Altan:-Dept. of Lands and Foresty
Alberta Travel Bureau
Depr of Highwayw Surveys Branch
B.C. Branch Dept. of Lends, Forests, and Water Renources

Sources for Federal Data

Subjact
Sources for Provincial Data

## MARRIAGES <br> Seo "VitalStatistics"

Dept. of Industry
Information Division
Dept. of Agriculture
Economics Branch
Dept. of Trade and Commerce
Trade Services Branch
Commodities Branch
Dominion Bureau of Statistics

Dept. of Energy, Mines and Ro sources
Geological Survey of Canada
Mines Branch
Mineral Economics Division
Dept. of industry
Materials Branch
Dept. of Trade and Commerce
Economics Branch
Industrial Materials Branch
Dominion Bureay of Statistics (for production data)

Dept, of Energy. Mines and Resources
Geological Survey of Canada
Mines Branch
Mineral Exconomics Division
Dept. of Indian Affairs and Northern Development
Northern Administration Branch (Y.T. and N.W.T.)

Resource and Economic Development Group
Dept. of Industry
Materials Branch
Dept. of Trade and Commerce
Industrial Materials Branch
Dominion Bureau of Statistics (for production data)

National Film Board
(Produces documentary films, newsreeds and short anbjects for theatrical. non-theatrical and television distribun tion; film-strfos and photographs for informational, educational and architant purposes; other visual moterials decooted to the interpretation of the Canadian scene to audtences both in Canada and abroad; and maintains a large film pratieto Jibrary for the benefit of sooern ment dopartments and other official bodies.)
Canadian Broadcasting Corporation (Praduces 16 mm , films for broadcanling ooer its own networks and atations. Some of these are aooilable for export sales.)
Central Mortgaje and Housing Corportation (library of films on housing and urban renewal)
Dept. of Forestry and Rural Development
Information and Technical Services Division (maintains lending library of forestry training and resource films)
National Gallery of Canada (tibrary of films on art)

## METALS

See also
"Iron and Steel"


MOTION
PICTURES

Ont.:--Dept. of Economics and Development
Man., Saek.:-Depts. of Industry and Commerce
Alta.:-Dept. of Industry and Development
B.C.:-Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistic:
Nfld.:-Dept. of Mines, Agriculture and Resources
N.S., Ont, - Depts. of Mines
N.B.:-Dept. of Lands and Mines

Que.:-Dept. of Natural Resources
Man.:-Dopt. of Mines and Natural Resources, Mines Branch
Sask.:-Dept. of Mineral Resources Alta.:-Dept. of Mines and Minerals B.C.:-Dept. of Industrial Development, Trade, and Commeree. Bureau of Economics and Statistics
Dept. of Mines and Petroleurn Resources

NAd. - - Dept. of Mines, Agriculture and Resources
P.E.I I_-Dept. of Industry and Natural Resources
N.S., Ont.:-Depts. of Mines
N.B.:-Dept of Lands and Mines Que.:-Dept. of Natural Resources
Man.:-Dept. of Mines and Natural Resources, Mines Branch
Sask.:-Dept. of Mineral Resources
Alta.t-Dept. of Mines and Minerals
B.C.:-Dept. of Mines and Petroleum Resources

Nfid., P.E.I., N.B. $\mathbf{I}$-Purchase films but do not produce them
N.S., Que., Alta., B.C.t-Produce educational or informational films
Ont.:-Dept. of Tourism and Information, Theatreo Branch and Photography Branch (Films are uoailable to the public from several other departments.)
Man.:-Dept. of Industry and Commerce
Sask.:-Dept. of Industry and Commerce
Dept. of Education, Visual Education Branch
Alta,t-Dept. of Industry and Development. Photographic Branch
B.C.t-Dept. of Recreation and Conservation
(All proolnces have Motton Picture Censorship Boards. Delalls coaailable from: Depts. of Education and Travel,
Provincial Consorshtp Boards and
National Film Board Regional Offices.)

| Sources for Federal Data | Subject | Sources for Provincial Data |
| :---: | :---: | :---: |
| Dominion Bureau of Statistics Governments Division <br> Dept. of Finance (rounicipal grants) Dept. of Indian Affairs and Northern Development (Y.T. and N.W.T.) | $\begin{gathered} \text { MUNICIPAL } \\ \text { AFFAIRS } \end{gathered}$ | $\left\{\begin{array}{c} \text { Nfl.:-D-Dept. of Municipal Affairs } \\ \text { P.E. And Supply N.B. N. N. N. Que., Ont., } \\ \text { Man., Sask., Alta., B.C.;- } \\ \text { Depts. of Municipal Affairs } \end{array}\right.$ |



Nfld.:-Dept. of Provincial Affairs N.S.:-Nova Scotia Museum of Fine Arts. Public Archives of Nova Scotia, Provincial Museum of Nova Scotia, Halifax
N.B. ;-New Brunswick Museum, Saint John
Que.:-The Archives. Muste de la Province de Quebec. Quehec Commercial and Industrial Mu. seum of Montreal
Dept. of Cultural Affairs
Ont.:-Royai Ontario Museum, Art and Archaeotogy, Life Sciences and Earth Sciences Divisions Dept of Public Records and Archives
Man.s-Manitoba Museum. Winni-
Sack.:-Provincial Museum, Regina Western Development Museum. Saskatoon
Alta.:-Dept. of Provincial Secretary. Provincial Museum, Edmonton
B.C.:-Provincial Museum of Nataral History and Anthropology. Provincial Archives (including Helracken House), Victoria
Also provincial universities of Sask.. Alta, and B.C.

Comptroller of the Treasury (government accounts)
Dominion Bureau of Statistics

## NATIONAL <br> ACCOUNTS

Dept. of Transport
Marine Services (aids to marine navigation; secondary canals)
Telecommunications Branch (radio aids to navigation)
Information Services
Canada Transport Comruission
Dept. of Energy, Mines and Resources
Canadian Hydrographic Service
Legal Surveys and Aeronautical Charts Division
Dept. of Public Works
Operations Directorate
Nationat Harbours Board
National Research Council
Radio and Electrical Engineering Division (applications of radar to navigation)
Division of Mechanical Engineering (model-testing basin and bydraulic models)
St Lawrence Seaway Authority (St. Lawrence-Great Lakes canals)

## Sources for Federal Data

Subject
Sources for Provincial Data

Dept. of National Health and Welfare
Nutrition Division
Dept. of Agriculture Consumer Service
Dept. of Fisheries
Information and Consumer Service Dept. of Industry

Food Products Branch
Queen's Printer (agent for FAO and WHO publications)

## NUTRITION

Nfld., P.E.I., N.B., Que.:-Depts. of Health
N.S.:-Dept. of Public Health

Ont.:-Dept. of Health
Dept. of Agriculture and Food, Home Economics Service
Man.:-Dept. of Health, Health Education Branch
Sack.:-Dept. of Public Health, Nutrition Division
Alta. 4 -Dept. of Agriculture, Nutritionist
Dept. of Public Health
B.C.-Dept. of Health Services and Hospital Insurance

Dept. of Energy, Mines and Resources
Marine Sciences Branch
Dept. of Fisheries
Dept. of National Defence
Defence Research Board
Fisheries Research Board

## OCEANOGRAPHY

Nfld. $\quad-$ Dept, of Mines, AgricuIture and Resources
Que.t-Dept. of Tourism, Game and Fish
Marine Biological Station of
Grande Rivière Fisheries Training School
B.C.;-Institute of Oceanography. University of British Columbia.
Dept. of Energy. Mines and Re-
sorurces
Geological Survey of Canada
Mineral Economics Division
Mines Branch
Dept of Indian Affairs and Northern
Development
Northern Administration Branch
Indian And N. W.T.)
reserves)
Resours Branch (Indian
ment Group Econornic Develop-
Dept. of Industry
Chemicals Branch
Dept of Trade and Commerce
Industrial Materials Branch
National Energy Board
Dominion Bureau of Statistics

OIL AND
NATURAL GAS

Dept. of National Health and Welfare
Dept. of Indian Affairs and Northern Development.
Northern Administration Branch (Y.T. and N.W.T.)

Dept. of Labour
Civilian Rehabilitation Branch (employment of older workers)
Dept. of Veterans Affairs (veterans only)

OLD AGE
ASSISTANCE

## See also <br> "Veterans Affairs"

 Welfare
## OLD AGE <br> SECURITY

Subject
Sources for Provincial Data
NAd.:-Dept. of Mines, Agriculture and Resources
P.E.I.:-Dept. of Tourist Development
N.S., Alta.t-Depts. of Lands and Forests
N.B.:-Dept. of Latuds and Mines

Que. F-Dept. of Tourism, Game and
Ont.:-Dept, of Lands and Forests. Parks Branch
Dept. of Encrgy and Resources Management, Conservation Branch Man::-Dept, of Mines and Natural Resources. Forestry Branch
Dept. of Tourism and Recreation Sakk. :-Dept. of Natural Resources B.C.:-Dept. of Recreation and
(NAd.:-Dept. of Provincial Affairs P.E.I., N.B., Sask., Alta., B.C.:Legislative Assemblies
The Senate
The House of Commons
Library of Parliament
Privy Council Office
PARLIAMENT
N.S.:-House of Assembly

Que.:-Legislative Council Legislative Assembly
One.:-Legislative Assembly
Clork of the Legislative Assembly Man.:-Legislative Council

Dept. of Registrar General
Patent and Copyright Office
Trade Marks Office
Canadian Patents and Development Limited (licences available on patents from Government laboratories, etc.)
National Librery (handles all copyright books)

Dept. of National Health and Welfare Canada Pension Plan
Dept. of Labour (re private pension plans)
Dept. of National Revenue
Dominion Bureau of Statistice (private pension plan statistics)

National Film Board
Canadian Broadcasting Corporation Information Services (radio and TV program photos)
Central Mortgage and Housing Corporation
Dept. of Energy. Mines and Resources
Public Relations and Information Services
Mineral Economics Division
National Air Photographic Library
Dept. of Forestry and Rural Development
Information and Technical Services Division
Dept., of Indian Affairs and Northern Development
Information Services Division
Dept. of Trade and Commerce
Canadian Government Travel Burenu
National Capital Commission
Information and Historical Division (related to the Development of the National Capital)
Public Archives (historical)

## PATENTS, COPY. RIGHTS AND TRADE MARKS



## PHOTOGRAPHIC MATERIAL

## See also

"Motion Pictures" and "Tourist Trade ${ }^{\prime \prime}$
N.S.:-Dept. of Trade and Industry Man., Sask.t-Dept. of Industry and Commerce
B.C.f-Dopt. of Recreation and Conservation. Photographic Branch
(Photographs are acailable from many pravifictal government departments in all prootinces.)

## Sources for Federal Data


$\left.\begin{array}{l}\text { Dept, of Agriculture } \\ \text { Production and Marketing Branch } \\ \text { Poultry Division } \\ \text { Healh of Animals Branch } \\ \text { Contafious Diseases Division } \\ \text { Meat Inspection Division } \\ \text { Animal Pathology Division } \\ \text { Research Branch } \\ \text { Animal Research Institute } \\ \text { Dept. of Industry } \\ \text { Food Products Branch for } \\ \text { Quen's Printer (agent for FAO } \\ \text { publications) } \\ \text { Doninion Bureau of Statistics }\end{array}\right\}$ POULTRY

Nfld:--Dept. of Mines, Agriculture and Resources
P.E.L., N.S.:-Depts. of Agriculture
N.B., Alta., B.C.:-Depts. of Agriculture. Poultry Branches
Que.t-Dept. of Agriculture and Colonization, Animal Production Service
Dept. of Industry and Commerce. Bureau of Statistics
Ont.:-Ontario Agricultural College (Guelph). Poultry Division
Man:-Dept. of Agriculture and Conservation, Extension Service
Sask. :-Dept. of Agriculture, Animal Industry Branch

Dept. of Secretary of State
Secretariat Branch

## PRECEDENCE <br> AND CEREMONIAL

(Nfld.:-Dept. of Provincial Affairs P.E.I., N.S., Ont., B.C.:-Depts. of Provincial Secretary
Que.:--Executive Council, Chief of Protocol
Man., Alta.s-Depts. of Provincial Secretary. Clerk of the Executive Council


Nfld.:-Dept, of Health
P.E.I.:-Travel Bureau
N.S.z-Dept. of Public Health, Vital Statistics Branch
N.B.t-Dept. of Health. Vital Statistics Branch
Que: :-Dept. of Health. Vital Statistics Branch
Dept. of Industry and Commerce. Bureau of Statistics
Ont.:-Dept, of Economics and Development. Office of the Chief Economist
Man.:-Dept. of Industry and Commerce
Dept. of Municipal Affairs
Treasury Dept.
Economic Research Branch
Sask.:-Dept. of Public Health, Vital Statistics Branch
Legislative Library
Alta.:-Dept. of Industry and Development. Provincial Statistician
B.C.s-Dept, of Industrial Development. Trade, and Commerce. Bureau of Economics and Statistics


## Subject

## PUBLIC

DOCUMENTS
(Commissions of Appointment, Proclamations, Land Grants, etc.)

Sources for Provincial Data

Nfld.:-Dept. of Provincia! Affairs Dept. of Mines. Agriculture and Resources
P.E.I., N.S., N.B., Que., Ont., Man., Sask., B.C.;-Depts. of Provincial Secretary

Dept. of Registrar General Registration Branch Public Archives (early records)

Dominion Bureau of Statistics

## PUBLIC UTILITIES

See also
"Electric Power"

Nfid., Alta.:-Boards of Public Ubilities Commissioners
P.E.I., B.C.:-Public Utilities Commissions
N.S., N.B.:-Boards of Cormmissioners Public Utilities
Que.:--Public Service Board
Quebec Hydro-Electric Commission
Ont.:-Dept. of Energy and Re sources Management
The Hydro-Electric Power Commistion of Ontario
Ontario Telephone Service Commission
Ontario Water Resources Commission
Ontario Municipal Board
Man.:-Dept. of Public Utilities
Sask:--Gopt. ofnment Finance Office Saskatchewan Government Telephones
Saskatchewan Power Corporation

Dept. of Public Works Operations Directorate Information Services
Dept. of Labour
Labour Standards Branch (fair wages)
Dept. of Transport
Marine and Air Services
St. Lawrence Seaway Authority

## PUBLIC WORKS

Canadian Broadcasting Corporation Board of Broadeast Governors (regulations for operation of radio and TV stations and networks both public and private)
Canadiar Overseas Telecommunication Corporation
Dept. of 1ndustry
Electrical and Electronics Branch
Dept. of Transport
Telecommunications Branch (all matters affecting licences and facilities)
National Research Council
Radio and Electrical Engineering Division (radio science and its application to industry)


Ont.:-Ontario Provincial Police, Radio Communications Branch Ryerson Institute of Technology, Toronto, Radio Station CJRTFM
Sask:--Dept. of Natural Resources. Communications Division
Alta.:-Radio CKUA, Edmonton, operated by Alberta Government Telephones
B.C.t-Dept. of Lands, Forests. and Water Resources. Radio Section

## RAILWAYS <br> Seo <br> "Transportation"

$\left.\begin{array}{l}\text { Dept. of Indian Affairs and } \\ \text { Northern Development } \\ \text { Notional and Historic Parks } \\ \text { Branch } \\ \text { Northern Administration Branch } \\ \text { (Y.T.and N.W.T.). } \\ \text { Dept. of Forestry and Rural } \\ \text { Development } \\ \text { Information and Technical Serv- }\end{array}\right\}$ ices Diva an
Dept. of National Health and Welfare
National Gallery of Canada
National Film Board

Dept. of Veterans Affairs (veterans)
Dept, of Indian Affairs and Northern Development Northern Administration Branch (Eskimos)
Information Division (Indians)
Dept. of Manpower and Immigration
Vocational Rehabilitation Branch
Dept. of Nationai Health and Welfare
Dept. of Solicitor General
Canadian Penitentiary Service National Parole Board
National Film Board

Dept. of Energy. Mines and Resources
Water Resources Branch
Mineral Economics Division
Dept. of Fisheries
Resource Development Service
Dept, of Forestry and Rural Development
Information and Technical Services Division
Dept. of Indian Affairs and Northern Development
Northern Administration Branch (minerals, oil. gas in Y.T. and N.W.T.)

Resource and Economic Devolopment Group
Dept. of 1ndustry
Area Development Ageney

## RECREATION

 See also "Health"
## REHABILITATION (of persons)

RESOURCE DEVELOPMENT

Nfld.:-Dept. of Provincial Affairs Dept. of Mines, Agriculture and Resources
P.E.I., N.S., Que., Ont.:-Depts. of Education
N.B.:-Dept, of Youth and Welfare Dept. of Natural Resources. Travel Bureau
Man.z-Dept. of Tourism and Recreation
Sask.:-Dept. of Industry and Commerce, Tourist Development Branch
Dept. of Education
Alta.:-Dept. of Provincial Secre. tary, Recreation and Cultural Development Branch
B.C.:-Dept. of Recreation and Conservation

Nfld.:-Dept. of Health. Provincial Co-ordinator of Rehabilitation
P.E.I.:-Dept. of Welfare
N.S.:-Dept. of Public Health. Provincial Rehabilitation $\mathrm{C}_{0}$ ordinator
N.B.:-Dept. of Health, Director and Coordinator of Rehabilitation
Que,:-Dept of Family and Social Welfare
Dept. of Education, Service for the Vocational Rehabilitation of the Handicapped
Dept. of Labour
Ont:-Dept. of Public Welfare. Provincial Co-ordinator of Vo cational Rehabilitation
Dept. of Health. Rehabititation Division
Dept. of Reform Institutions
Man.:-Dept. of Health, Provincial Director of Rehabilitation Services
Sask.:-Dept. of Welfare. Provincial Co-ordinator of Rehabilitation
Alta.:-Dept. of Public Welfare
Provincial Coordinator of Rehabilitation
B.C. - Dept. of Health Services and Hospital Insurance. Rehabilitation Co-ordinator

NAd.:-Dept. of Economic Development
Dept. of Mines. Agriculture and Resources
Dept. of Community and Social Development
P.E.1.:-Dept. of 1ndustry and Natural Resources
N.S.:-Dept. of Trade and Industry
N.B.:-Dept. of Finance and Industry
Que.:-Depts. of Lands and Forests. Labour, Roads. Family and Sacial Welfare, Natural Resources, and Industry and Commerce
Ont.:-Dept. of Economics and Development. Office of the Chief Economist
Dept. of Energy and Resources Management
Dept. of Lands and Forests
Ontario-St. Lawrence Development Commission
Dept, of Municipal Affairs, Community Planning Branch
Ontario Northland Transportation Commission; North Bay

Sourcea for Federal Data
Fisheries Research Board
Northern Canada Power Commission
Queen's Printer (agency for OECD publicationc)

Subject


National Research Council
Laboratory Divisions (biosciences, building research. pure and applied chemistry, mechanical engineering, aeronautical research. pure and applied physics, radiation biology, radio and electrical engineering)
Regional Laboratories at Saskatoon. Sask., and Halifax, N.S.
Science Secretariat, Privy Council Office. Ottawa
Canadian Patents and Development Limited (licences available on patents derived from government research, etc.)
Atomic Energy of Canada Limited. Chalk River, Ont.
Dept. of Agriculture
Research Branch (basic and applied research on all aspects of agriculture)
Dept. of Energy, Mines and Resources
Geological Survey of Canada
Mines Branch
Observatories Branch
Geographical Branch
Marine Sciences Branch
Inland Waters Branch
Dept. of Forestry and Rural Development
Information and Technical Services Division
Dept. of Indian Affairs and Northern Development
National and Historic Parks Branch
Northern Co-ordination and Research
Canadian Wildlife Service
Dept. of lndustry
Industrial Research Adviser
Dopt. of National Defence
Defence Research Board
Dept. of National Health and Welfare
Dept. of Transport (aviation, radio. metcorology, navigation)
Dept. of Veterans Affairs (medical research)
Fisheries Research Board
Medical Research Council (fellowships, associatesbips and grants-in-aid)
National Gallery of Canada (conservation research laboratory)
Queen's Printer (agency for International Atomice Energy Agency publications)

SCIENTIFIC RESEARCH

See also<br>"Atomic Energy"

Man.:-Dept. of Mines and Natural Resources
Dept. of Industry and Commerce
Manitoba Development Authority
Sask. z-Dept. of Industry end Commerce, Resource Development Branch
Alta. :-Dept. of Industry and Development
B.C.:-Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Nfld. :-Dept. of Economic Development
P.E.I.:-Dept. of lndustry and Natural Resources
N.S.:-Nova Scotia Research Foundation
N.B.:-Dept. of Finance and 1 n dustry
Que.:- Dept. of Agriculture and Colonization
Dept. of Natural Resources
Dept. of Roads
Ont. - Ontario Research Foundation Dept. of Agriculture and Food
Dept. of Lands and Forests
Alcobolism and Drug Addiction Research Foundation of Ontario
The Hydro-Electric Power Commission of Ontario
Sheridan Park Research Community.
Man.:-Various Depts. such as Health and Mines and Natural Resources
Manitoba Research Council
Sask.:-Saskatchewan Research Council
Alta.f-Alberta Research Council
B.C.:-Dept. of Industrial Develop ment, Trade. and Commerce. B.C. Research Council

Dopt. of Trade and Commerce Standards Branch (for inquiries on electricity and gas inspection. weights and measures, precious metals marking. commodity atandards and national trade mark matters)
Canadian Government Specifications Board (specifications for purchasing)
Canadian Standards Association
Central Mortgage and Housing Corporation (building standards)
Dept. of Labour
Labour Standards Branch (fair wages, hours of work)
Dept. of National Defence
Dept. of Transport (standards in radio frequencies, standards in steamship inspection)
National Research Council
Applied Physics Division (fundamental physical and electrical standards)
Division of Building Research. Specifications Section

Dominion Bureau of Statistics
Central Mortgage and Housing Corporation
Dept. of National Health and Welfare Research and Statistics Directorato Queen's Printer (agent for United Nations publications)

## STATISTICS

Subjoct

## SOCIAL

 SECURITY See "FamilyAllowances"
"Blindness
Allowances"
"Old Age Assistance" "Old Age Security" "Disabled Persons Allowances" "Labour"
"Unemployment"
"Veterans Affairs" "Economic and Social Research"

## SOCIAL WELFARE See "Welfare"

)


Ont:-Dept, of Labour Ontario Research Foundation Ontario Housing Corporation

Sources for Provincial Data

Nfid.:-Dept. of Provincial Affairs Dept. of Economic Development N.S. x-Dept, of Trade and Industry N.B.:-Dept. of Education

Que.:-Dept. of Industry and Commerce, Bureau of Statistics
Ont:--Dept. of Economics and Devolopment. Office of the Chief Economist
Man.:-Dept. of Industry and Commerce, Business Research Branch
Sazk,:-Esonomic Development Board
Alta-1-Dept. of Industry and Development, Bureau of Statistics Dept. of Public Health, Vital Statistics
B.C.:-Dept. of Industrial Development. Trade, and Commerce, Bureau of Economice and Statistics

Subjoct

## Sources for Provincial Data

NAd., Que.:-Depts. of Finance P.E.I.:-Provincial Treasurer
N.S.:-Dept. of Finance and Economics
N.B.:-Dept. of Provincial Secretary Dept. of Finance and Industry
Ont. 4 -Treasury Dept.
Dept. of Exconomics and Development, Office of the Chief Economist
Man., Sask.:-Provincial Treazury Depts.
Alta.:-Provincial Treasurer's Dept. Dept. of Provincial Secretary
Dept. of Municipal Affairs
B.C.: Dept. of Finance, Surveyor of Taxes

Board of Broadeast Governors
Canadian Broadcasting Corporation
Dept, of Industry
Electrical and Electronics Branch Dept. of Transport

Telecommunications Branch
National Research Council
National Film Board

TELEVISION
See also "Radio"

Dept. of Energy, Mines and Resources
Topographical Survey
National Research Council
Applied Physics Division (photogrammetric research)

TOPOGRAPHY

Nad.:-Dept. of Mines, Agriculture and Resources.
N.S.:-Dept of Mines

Nova Scotia Research Foundation N.B.:-Dept. of Lands and Mines

Que.:-Dept. of Lands and Forests
Dept. of Industry and Commerce, Drafting Division
Dept. of Natural Resources
Ont.z-Dept. of Lands and Forests. Lands and Surveys Branch
Man.:-Dept. of Mines and Natural Resources, Surveye Branch
Sask.:-Dept. of Natural Resources
Alta., B.C.;-Depts. of Lands and Forests


Sources for Federal Date

Dept. of Trade and Commerce
Agriculture and Fisheries Branch
Canadian Government Exhibition Commission
Export Credits Insurance Corporation
Industrial Materials Branch
Marufacturing Industries and Engineering Branch
Office of Commodity Trade Policy
Office of Trade Relations
Standards Branch (weights and measures)
Trade Commissioner Service
Trade Fairs and Missions Branch
Trade Publicity Branch
Trade Services Branch
Dept. of Finance
Economic Affairs Division (tariff policy)
Dept of Forestry and Rural Development
Information and Technical Services Division
Dept, of Industry
Information Division
Dept. of Registrar General
Corporations Branch
Queen's Printer (agent for OECD, Commonwealth Economic Committee and GATT publications)
National Film Board
Dominion Bureau of Statistics

Subject
Sources for Provincial Data

For incorporation of companies under provincial law, address Provincial Secretaries except NAd., where Dept. of Justice is the authority and B.C., where Attorney General's Department is the authority.
P.E.I:-Dept. of Industry and Natural Resources
N.S.:-Dept. of Trade and Industry
N.B.:-Dept. of Finance and Industry

Que., Man.:-Depts. of Industry and Commerce
Ont.:-Dept. of Economics and Development. Trade and Industry Branch and Office of the Chit Economist
Sask.:-Dept. of Industry and Commerce, Area and Trade Development
Alta.t-Dept. of Industry and Development
B.C.:-Dept. of Industrial Develop. ment. Trade, and Commerce

Que.:-Legislative Assembly Bureau for Translations and all departments of the provincial administration.

Dept. of Transport
Information Services
Air Canada
Canada Transport Commission (regulations re railways: highway crossings; rates of railways. express companies and certain inland water carriers; rates re communications, international bridges and tunnels; licences to certain inland carriers: commercial air services)
Canadian National Railways
Dept. of Indian Affairs and Northern Development
Northern Administration Branch
National and Historic Parks
Branch (highways in National Parks)
Dept. of Industry
Mechanical Transport Branch
Dept, of Public Works
Operations Directorate
Dept. of Trade and Commerce
Trade Services Branch
National Harbours Board
Northern Transportation Company Limited (Crown)
Queen's Printer (agent for ICAO publications)
St. Lawrence Seaway Authority
National Film Board
Dominion Bureau of Statistica

Nfld., N.S.:-Depts. of Highways
P.E.I.:-Dept. of Public Works
N.B.:-Dept. of Public Works, Highways Branch
Que.:-Dept. of Transportation and Communications
Dept. of Roads
Ont.:-Dept. of Transport
Dept. of Highways
Dept. of Economics and Development. Office of the Chief Economist
Ontario Northland Transportation Commission, North Bay
Man.:-Dept. of Public Works, Highways Branch
Manitoba Transportation Commission
Dept. of Public Utilities
Dept. of Industry and Commerce
Sask,:-Dept. of Highways and Transportation
Sasketchewan
Transportation Company
Economic Development Board
Alta.:-Dept. of Highways
Highway Traffic Board
Alberta Freight Bureau
B.C.:-Dept. of Commercial Transport
Dept. of Highways

| Sources for Federal Data | Subject | Sources for Provincial Data |
| :---: | :---: | :---: |
| Dept, of Indian Affairs and Northern Development <br> Northern Adrinistration Branch (Y.T. and N.W.T.) <br> National and Historic Parks Branch <br> Dominion Bureau of Statistics | TRAPPING <br> See also <br> "Far Farming" |  |
| Dept, of Labour <br> Economics and Research Branch Queen's Printer (agent for ILO publications) <br> Unemployment Insurance Commission <br> Dominion Bureau of Statistics | UNEM. PLOYMENT |  |
| Unemployment Insurance Commission Indian Affairs and Northern <br> Dept. of Indian Affairs and Northern <br> Northern Administration Branch (Y.T. and N.W.T.) <br> Dept. of Manpower and Immigration <br> Canada Manpower Division (winter works progrem, voca- <br> tional training) Dept. of National Health and Welfare | UNEMPLOYMENT ASSISTANCE |  |



Dept. of Veterans Affairs (general information, rehabilitation, welfare, allowances, training, treatment, land settlement, education of children of war dead, insurance, records of service, war graves and medals)
Canadian Pension Commission (the Pension Act and Civilian War Pensions and Allowances Act, Parts I to X )
Dept. of Finance (veterans business and professional loans)
Dept. of Indian Affairs and Northern Development
Indian Affairs Branch (Indian veterans)
Dept. of Manpower and Immigration (vocational training)
War Veterans Allowance Board (the War Veterans Allowance Act and Civilian War Pensions and Allowances Act, Part XI)
P.E.I., Man.:-Depts. of Welfare
N.S.:-Dept. of Public Welfare
N.S.:-Dept. of Public Welfare

Que:-Dept. of Family and Social Welfare
Ont.:- Dept. of Public Welfare, Soldiers Aid Commission
Salk.:-Dept. of Welfare, Rehabilitation Division
B.c.:-Dept. of Provincial Secretary

## Sources for Federal Data

## Subject

## Sourcen for Provincial Data

|  |  |
| :---: | :---: |
| Dominion Bureau of Statistics Dept. of Indian Affairs and Northern |  |
| Dept. of Indian Aftairs and Northern |  |
| Northern Administration Branch (Y.T. and N.W.T.) | VITAL STATISTICS |
| Dept, of Manpower and Immigration Canada Immigration Division |  |
| Public Archives (early census records) |  |

NAdi, N.B., Que, :-Depts, of Health of Vital Statistics
N.S.:-Dept. of Public Health. Reqistrar General
Ont.:-Dept. of Provincial Secretary and Citizenship. Office of the Registrar-General
Man.:-Dept. of Health, Vital Statistics Division
Sask.:-Dept. of Public Health. Vital Statistics Branch
Alta.:-Dept. of Public Health, Director of Vital Statistics
B.C.:-Dept. of Health Services and Hospital Insurance. Vital Statistics Division

Dept. of Energy. Mines and Resources
Water Resources Branch
Inland Waters Branch
Dept. of Agriculture
Prairie Farm Rehabilitation Administration
Dept, of Fisheries
Congeryation and Development Service
Dept. of Forestry and Rural Development
Information and Technical Services Division
National Film Board

Nfld.:-Dept. of Mines, Agriculture and Resources
N.S.:- Nova Scotia Water Authority N.B.:-Dept. of Lands and Mines

Que:-Dept. of Natural Resources
Ont.:-Ontario Water Resources Commission
Dept. of Lands and Forests
Man::-Dept. of Agriculture and Conservation. Water Control Branch
Saak.:-Saskatchewan Water Resources Commission
Dept. of Agriculture
Alta.:-Dept. of Agriculture
B.C.:-Dept. of Lands, Forests and Water Resources

Dept. of National Health and
Dept, of Indian Affairs and Northern Development
Northern Administration Branch (for Eskimos)
Jndian Affairs Branch
National Advisory Committee on the Rehabilitation of Disabled Persons
Unemployment Insurance Commission
Yukon Territorial Council. Whitehorse
National Film Board
Dominion Bureau of Statistics

|  |
| :--- |
| Dept., of Indian Affairs and Northern <br> Development <br> Canadian Widlife Service <br> Commissioner of Yukon Territory. <br> Whitehorse <br> Dept, of Fisheries <br> Information end Consumet <br> Serrice |

WELFARE
For Welfare of
Veterans see
"Veterans Affairs"

## WILDLIFE

Nfld., N.S., Ont., Alta.:-Depts. of Public Welfare
P.E.I. W/ Man., Sasic.:-Depts. of Welfare
N.B.:-Dept. of Youth and Welfare Que.:-Dept. of Family and Social Qu.: Welfare
B.C.:-Dept. of Social Welfare

## PART II.-SPEGIAL MATERIAL PUBLISHED IN FORMER EDITIONS OF THE CANADA YEAR BOOK

It is not possible to include in any single edition of the Year Book all articles and descriptive text of previous editions. Therefore the following list has been compiled as an index to such miscellaneous material and special articles as are not repeated in the present edition. This list links up the Year Book with its predecessors in respect of matters that have not been subject to wide change. Those Sections of Chapters, such as "Population", which are automatically revived when later census material is made available and to which adequate references are made in the text, are not listed unless they are in the nature of special contributions. The latest published article on each subject is shown, except when an earlier article includes material not repeated in the later one. When an article covers more than one subject it is listed under each appropriate heading.

The articles marked with an asterisk (*) are available in reprint form from the Information Division, Dominion Bureau of Statistics.

| Subject and Article | Contributor | Edition | Page |
| :---: | :---: | :---: | :---: |
| Agriculture- |  |  |  |
| Historical Background of Canadian Agriculture. | G. S. H. Barton | 1939 | 187-190 |
| The Major Soil Zones and Regions of Canada | P. C. Stobbe. | 1951 | 352-356 |
| The Board of Grain Commissioners. . | W. J. MacLeod. | 1960 | 957-958 |
| The Canadian Wheat Board and its Role in Grain Marketing. | C. B. Davidson.. | 1960 | 958-980 |
| Changes in Canadian Agriculture as Reflected by the Census of 1961 . | - | 1963-64 | 409-415 |
| Agriculture in the Canadian Economy. 1964. . |  | 1965 |  |
| Contribution of the Canada Department of Agriculture to Modern Agricultural Science | - | 1966 | 457-461 |
| Art, Literature and the Press*The Democratic Functioning of the Press. | W. A. Bucbanan. | 1945 | 744-748 |
| Report of the Royal Commission on National Development in the Arts, Letters and Sciences. |  | 1952-53 | 342-345 |
| A History of Canadian Journalism, 1752(circa) 1900 | W. H. Kesterton. | 1957-58 | 920-934 |
| A History of Canadian Journalism (circa) 1900-1958. | W. H. Kesterton. | 1959 | 883-902 |
|  |  |  |  |
| The Bank of Canada and its Relation to the Financial System. | - | 1937 | 881-885 |
| Historical Sketch of Currency and Banking.. |  | 1938 1940 | -901-906 |
| The Royal Canadian Mint. .... | H. E. Ewart | 1940 |  |
| Wartime Control under the Foreign Exchange Contral Board | R. H. Tarr. | 1941 | $833-835$ $830-833$ |
|  |  | 1954 | 1061-1064 |
| Commercial Banking in Canada. | J. Douglas Gibgon | 1961 |  |
|  |  |  |  |
| Early Naturalization Procedure and Events Leading up to the Canadian Citizenship |  | 1951 | 153-155 |
| Aet.... .... ... .... | - | 1951 | 153-155 |
| Climate and Meteorology- <br> Factors which Control Canadian Weather. |  | 1925 | 36-40 |
|  | Sir frederick Stupart. |  |  |
| Temperature and Precipitation of Northern Canada | A. J. Connor | 1930 | $\begin{aligned} & 41-56 \\ & 47-59 \end{aligned}$ |




| Subject and Article | Contributor | Edition | Page |
| :---: | :---: | :---: | :---: |
| Mining- |  |  |  |
| Mining-A Historical Sketch. |  | 1939 | 309-310 |
| Geology and Economic Minerals........ | George Hanson. | 1942 | 3-14 |
| The Coal Deposits and Coal Resources of Canada................. ............. | B. R. Mack | 1946 | 337-347 |
| Canadian Crude Petroleum Situation. | G. S. Hume | 1952-53 | 524-527 |
| History of Pipeline Construction in Canada. . | G. S. Hume | 1954 | 861-869 |
| Canadian Metallurgical Development........ | Jomi Conve | 1961 | 513-522 |
| Physlography and Related SciencesPhysical Geography of the Canadian Eastern |  |  |  |
| Arctic..... ... ............. ....... | R. A. Gibson. | 1945 | 12-19 |
| Hydrographical Feature | F. C. G. Smite. | 1947 | 3-12 |
| Physical Geography of the Canadian Western P A Grson $^{\text {a }}$ (1948-40 |  |  |  |
| Arctic. | R. A. Grison. | 1948-49 | 9 |
| The Draingre Basins of Cana |  | 1961 | ${ }_{18-18}^{1-14}$ |
| Economic Regions of Canada. | N. L. Nicholson | 1962 | 17-23 |
| Main Physical and Economic Features of the <br> Provinces and Territories. |  |  |  |
| Provinces and Territories. | G. S. Garland. | 1963-64 | 57-80 |
| Federal Government Surveying and Mapping | Mary J. Groux | 1965 | 17-24 |
| *Astronomy in Canada. | Ian Halliday | 1965 | 47-55 |
| Population- |  |  |  |
| Oceupational Trends in Canada, 1891-1931. . A, H. LeNeveu. ...... 1939 774-778 |  |  |  |
| *Developments in Canadian Immigration. |  | 57-58 | 154-176 |
| Integration of Postwar Immigrants. |  | 1959 | 176-178 |
| *Native Peoples of Canada. | - | 1960 | 201-210 |
| Use of the English and Freuch Languages in Canada. | A. H. LhNevev. | 1965 | 180-184 |
| Mobility of Canada's Population, 1956-1961. | (Miss) Y. Kasabara... .. | 1966 | 179-187 |
| Research- |  |  |  |
| *The International Geophysical Year | D. C. Ross.. | 1957-58 | 35-38 |
| The Fisheries Research Board. | J. L. KABE... | 1959 | 584-588 |
| Geophysics. | G. S. Garland.. | 1963-64 | 57-60 |
| The Fisheries Research Board of Ca |  | 1963-64 | 612-614 |
| Astronomy in Canada...... | Ian Haluday. | 1965 | 47-55 |
| A selection of Canadian Achievements in | John R. Kohr | 1965 | 398-401 |
| Trade, Domestic- |  |  |  |
| The Board of Grain Commissioners. | W. J. MacLeod | 1960 | 957-958 |
| The Canadian Wheat Board and its Role in Grain Marketing. | C. B. Davidson | 1960 | 958-960 |
| Transportation- |  |  |  |
| The Development of Aviation in Canada. | J. A. Wilson. | 1938 | 710-712 |
| Pre-War Civil Aviation and the Defence Program. | J. A. Wilson. | 1941 | 608-612 |
| The Wartime Role of the Steam Railways of Canada. | C. P. Edwards | 1945 | 648-651 |
| International Civil Aviation Organization and Canada's Participation Therein. | C. S. Bоoтн. | 1952-53 |  |
| Canals of the St. Lawrence Waterway. $\ldots$. ${ }_{\text {a }}$ |  | 1954 | 830-833 |
|  | - | 1955 | 840-851 |
| The St. Lawrence Seaway | - | 1955 | 885-888 |
| Traffic on the Great Lakes - St. Lawrence <br>  |  | 1956 | 821-829 |
| The St. Lawrence Seaway in Operation | S. Juder. | 1960 | $851-860$ |
| Revolution in Canadian Transportation...... | A. W. Currie | 1962 | 753-758 |
| Operational and Technological Changes in Rail Transport.... | - | 1965 | 755-761 |

## PART III.-REGISTER OF OFFIGIAL APPOINTMENTS*

The following list includes official appointments for the period Jan. 1, 1966 to Jan. 31, $1967, \dagger$ continuing the list published in the 1966 Year Book at pp. 1143-1149. Appointments to the Governor General's Staff, judicial appointments, appointments to advisory councils and appointments of limited or local importance are not included.

Queen's Privy Council for Canada.-1966. Feb. 22, Hon. Maurice Bourget, Lévis, Que.: to be a member.

Lieutenant-Governor-1966. Feb. 22, Hon. Hugues Lapointe: to be LieutenantGovernor in and for the Province of Quebec.

Cabinet Appointments.-1966. Jan. 4, Hon. Robert Henry Winters: to be Minister of Trade and Commerce. Sept. 29, Hon. Arthur Laing: to be Minister of Indian Affairs and Northern Development. Hon. Guy Favreau: to be Registrar General of Canada. Hon. Maurice Sauvé: to be Minister of Forestry and Rural Development. Hon. Edgar John Benson: to be President of the Treasury Board. Hon. Lawrence T. Pennell: to be Solicitor General of Canada. Hon. Jean-Luc Pépin: to be Minister of Energy, Mines and Resources. Hon. Jean Marchand: to be Minister of Manpower and Immigration. 1967. Jan. 9, Hon. Walter Lockhart Gordon: to be a Member of the Administration.

Senate Appointments.-1966. Jan. 7, Hon. Sydney John Smith, a member: to be Speaker. Feb. 24, Earl Adam Hastings, Calgary, Alta.: to be a Senator for the Province of Alberta. Hon. Jean-Paul Deschatelets, Montreal, Que.: to be a Senator for the Province of Quebec. John Lang Nichol, Vancouver, B.C.: to be a Senator for the Province of British Columbia. Norman Archibald MacRae MacKenzie, Vancouver, B.C.: to be a Senator for the Province of British Columbia. Hon. Harry William Hays, Calgary, Alta.: to be a Senator for the Province of Alberta. James Harper Prowse, Edmonton, Alta.: to be a Senator for the Province of Alberta. Hazen Robert Argue, Kayville, Sask.: to be a Senator for the Province of Saskatchewan. Earl Wallace Urquhart, West Bay, N.S.: to be a Senator for the Province of Nova Scotia. Douglas Keith Davey, Toronto, Ont.: to be a Senator for the Province of Ontario. July 8, Chesley William Carter, St. John's, Nffd.: to be a Senator for the Province of Newfoundland. James Duggan, St. John's, Nfld.: to be a Senator for the Province of Newfoundland. Hon. Alan Aylesworth Macnaughton, Westmount, Que.: to be a Senator for the Province of Quebec. J. G. Leopold Langlois, Quebec, Que.: to be a Senator for the Province of Quebec. Paul Desruisseaux, Sherbrooke, Que.: to be a Senator for the Province of Quebec. Thomas Joseph Kickham, Souris, P.E.I.: to be a Senator for the Province of Prince Edward Island. Nov. 8, Douglas Donald Everett, Winnipeg, Man.: to be a Senator for the Province of Manitoba.

Parliamentary Secretaries.-1966. Jan. 9, John Matheson and Pierre Elliot Trudeau: to the Prime Minister. Jack Davis: to the Minister of Energy, Mines and Resources. J. J. Jean Chretien: to the Minister of Finance. Albert Béchard: to the Secretary of State. Charles R. M. Granger: to the Minister of Fisheries. Margaret Rideout: to the Minister of National Health and Welfare. James E. Walker: to the Minister of National Revenue. James A. Byrne: to the Minister of Transport. Jean-Charles Cantin: to the Minister of Trade and Commerce. Stanley Haidasz: to the Minister of Indian Affairs and Northern Development. Donald S. Macdonald: to the Secretary of State for External Affairs. Bryce S. Mackasey: to the Minister of Labour. John C. Munro. to

[^395]the Minister of Manpower and Immigration. John B. Stewart: to the Minister of Public Works and House Leader. Bruce S. Beer to continue as Parliamentary Secretary to the Minister of Agriculture.

Deputy Ministers.-1966. Oct. 1, Jean Miquelon: to be Deputy Registrar General of Canada. Tom Kent: to be Deputy Minister of Manpower and Immigration. Ernest-A. Côté: to be Deputy Minister of Indian Affairs and Northern Development. Claude Isbister: to be Deputy Minister of Energy, Mines and Resources. L.-Z. Rousseau: to be Deputy Minister of Forestry and Rural Development. Thomas Daniel MacDonald: to be Deputy Solicitor General. Nov. 1, David H. Sheppard: to be Deputy Minister of National Revenue for Taxation. 1967 Jan. 17, S. B. Williams: to be Deputy Minister of Agriculture.

Diplomatic Appointments.-1966. The following diplomatic appointments were announced during the year. Richard Plant Bower: to be Canadian Ambassador to the Federal Republic of Germany. John Kennett Starnes: to be Canadian Ambassador to the United Arab Republic. Paul Tremblay: to be Canadian Ambassador to Belgium and Luxembourg. George Ignatieff: to be Canadian Ambassador to the United Nations. Lt.-Gen. Raymond Judson Reeves: to be Commander-in-Chief of NORAD from July 31, 1966. Alfred John Pick: to be first Canadian Ambassador to Tunisia. Herbert O. Moran: to be Canadian Ambassador to Japan and Korea. Ronald Macalister Macdonnell: to be High Commissioner for Canada in New Zealand. Charles Eustace MeGaughey: to be High Commissioner for Canada in Pakistan. James Russell McKinney: to be High Commissioner for Canada in Trinidad and Tobago. Arthur John Hicks: to be Canadian Ambassador to Costa Rica, with concurrent accreditation to Panama, Nicaragua, Honduras and El Salvador. John Alexander McCordick: to be Canadian Ambassador to Austria. William George Marcel Olivier: to be Canadian Ambassador to Indonesia. Brigadier P. S. Cooper, seconded from Department of National Defence: to be Canadian Commissioner on the International Control Commission for Laos, vice K. W. MacLellan. C. S. A. Ritchie: to be Canadian Permanent Representative and Ambassador to the Delegation of Canada to the North Atlantic Council, Paris. Albert Frederick Hart: to be High Commissioner for Canada in Ghana and concurrently Canadian Ambassador to Togo and the Upper Volta. Joseph Jean Martial Côté: to be Canadian Ambassador to Senegal. Blanche Margaret Meagher: to be High Commissioner for Canada in Kenya. 1967. Blanche Margaret Meagher: to be High Commissioner for Canada in Uganda. James Russell McKinney: to be Figh Commissioner for Canada in Barbados. René Garneau: to be Canadian Ambassador to Algeria.

National Defence Appointments.-1966. June 22, Lt.-Gen. J. V Allard: to be Chief of the Defence Staff, vice Air Marshal Frank Miller, from July 16, 1966.

Air Transport Board.-1966. July 21, James Flood Clark, Montreal, Que.: to be a member for ten years from Sept. 1, 1966.

Air Canada.-1966. Sept. 29, Welland D. Woodruff, Toronto, Ont.: to be a Director for three years from Sept. 30, 1966, vice Hon. Leslie M. Frost.

Army Benevolent Fund Board.-1966. Jan. 5 , Alex Walker: to be again a member for four years. Mar, 3, Jack C. Lundberg, Belleville, Ont.: to be a member for four years.

Atlantic Development Board.-1966. Jan. 7, Ian M. MacKeigan, Robert Cheyne Eddy and Albert Martin: to be members for three years from Jan. 24, 1966, Mr. MacKeigan to be Chairman. Neil R. McLeod, Summerside, P.E.I.: to be a member for three years, vice Melvin J. McQuaid, resigned. 1967. Jan. S1, Calvert Coates Pratt, St. John's,

Nfld.; Simon-Louis Bujold, Moncton, N.B.; John Alexander Likely, Saint Johm, N.B.; and Charles Arnold Patterson, Dartmouth, N.S.: to be members for three years.

Board of Broadcast Governors.-1966. Feb. 18, Piecre Juneau, Montreal, Que.: to be a full-time member for seven years and to be Vice-Chairman, David Sim, Ottawa, Ont.: to be a full-time member. Oct. 21, Guy Rocher, Montreal, Que.; Miss Edouardina Dupont, Trois-Rivières, Que.; Major Reid, Souris, P.E.I.; and Gordon Waddell Thomas, St. Anthony, Nfld: to be part-time members for five years. 1967. Feb. 2, George T. Urquhart, Lancaster, N.B.: to be a part-time member for five years.

Canada Council.-1966. Feb. 16, Louis Hébert, Montreal, Que.: to be a member of the Investment Committee. Claude Robillard, Montreal, Que.: to be a member for three years. May 13, David Alexander Colville, Sackville, N.B.: to be a member for three years, vice Charles H. Forsyth, resigned. July 12, Jean-Adrien Arsenault, Mrs. W. J. Dorrance, Henry D. Hicks, Stuart Keate and C. J. Mackenzie: to be again members. Murray Adaskin, Saskatoon, Sask.: to be a member from July 15, 1966, wice J. W. T. Spinks. J. Alexander Corry, Kingston, Ont.: to be a member from July 15, 1966, vice G. Edward Hall.

Canadian Broadcasting Corporation.-1966. July 12, Maxwell Cohen, Montreal, Que.; Margaret Paton Hyndman, Toronto, Ont.; and Leonard Roussel, Ottawa, Ont.: to be Directors from July 15, 1966. David MeA. MacAulay, Sackville, N.B.: to be again a Director.

Canadian Commercial Corporation.-1966. May 19, Arthur Douglas Belyes: to be President, vice Ralph MacDonald Trites. Ralph MacDonald Trites: to be a Director during pleasure.

Canadian Corporation for the 1967 World Exhibition.-1966. Feb. 22, Herbert C. Pinder, Saskatoon, Sask.: to be a Director from Mar. 1, 1966, vice R. A. Kramer, resigned. July 26, John Stewart Proctor, Toronto, Ont.: to be a Director from Aug. 1, 1966, vice Guy Roberge, resigned. Oct. 20, Hon. Lionel Chevrier: to be Commissioner General for Visits of State 1967 Lieut.-Gen. Robert William Moncel: to be Co-ordinator for Visits of Heads of State 1967 Lieut.-Gen. Howard Graham: to be Co-ordinator for Royal Visits 1967.

Canadian Dairy Commission.-1966. Dec. 1, Sydney Clifford Barry, Ottawa, Ont.: to be a member and Chairman. Jules Thibaudeau, Thurso, Que.: to be a member and Vice-Chairman. Lyle Alexander Atkinson, Vancouver, B.C.: to be a member.

Canada Labour Relations Board.-1966. July 26, Jacques Guilbault, Baie Comeau, Que.: to be a member. Oct. 6, John Joseph Quinlan, Ottawa, Ont.: to be Vice-Chairmsn. Nov. 22, Kenneth Hallsworth, Don Mills, Ont.: to be a member as a representative of employers, vice Harry Taylor, resigned.

Canadian Maritime Commission.-1966. Feb. 10, H. J. Darling: to be Chairman from Feb. 21, 1966 for the remainder of his present term as a member.

Canadian National Railways.-1966. Sept. 29, Donald Gordon, President: to be again a Director and Chairman of the Board of Directors until his retirement from the Presidency on Dec. 31, 1966. N. J. MacMillan, Executive Vice-President: to be President from Jan. 1, 1967 and to be a member and Chairman of the Board of Directors for three years from Jan. 1, 1967. Oct. 22, Walter C. Koerner, Vancouver, B.C.; Bernard Tailleur, Montreal, Que.; and David Anderson, Toronto, Ont.: to be again Directora until Sept. 30, 1969. Dec. 28, Georges-Emile Lapalme, Montreal, Que.: to be a Director until Sept. 30, 1968, vice Jean Louis Levesque. Herbert C. Pinder, Saskatoon, Sask.: to be a Director from Jan. 1, 1967 util Sept. 30, 1968, vice Robert Arthur Brown, resigned.

Canadian Overseas Telecommunication Corporation.-1966. Feb. 10, Gillis Philip Purcell, Toronto, Ont.: to be again a Director for three years from Mar. 15, 1966. Nov. 8, Ralph Rubin Levine, Montreal, Que.: to be a Director for three years, vice Gordon Cowan, resigned. Dec. 20, Roland G. Lefrançois, Montreal, Que.: to be again a Director for three years from Dec. 27, 1966.

Canadian Pension Commission.-1966. Feb. 22, John Lyndon Thompson, Saint John, N.B.: to be an ad hoc member for one year from Apr. 1, 1966. Feb. 24, William Andrew Gilmour: to be a member for ten years from Mar. 1, 1966. June 7, James Malcolm Cameron, formerly of New Glasgow, N.S.: to be an ad hoc member for one year from July 1, 1966. June 23, Laurence Wilmott Brown, Ottawa, Ont.: to be an ad hoc member for one year from Oct. 3, 1966. July 25, John Murray Forman: to be a member and Deputy Chairman for ten years from Dec. 1, 1966. Nov. 3, René Jutras, Hull, Que.: to be a member for ten years from Dec. 1, 1966.

Civil Service Commission.-1967. Jan. 31, Ruth Elizabeth Addison: to be again a member for one year.

Company of Young Canadians.-1966. Jan. 12, William M. McWhinney: to be Interim Director. Apr. 14, Douglas Ward, Toronto, Ont.: to be a member and Chairman. Marc Lalonde, Montreal, Que.: to be a member and Vice-Chairman. Jean Archibald, Halifax, N.S.; Normand Asselin, Ottawa, Ont.; Alan M. Clarke, Ottawa, Ont.; Duncan Edmonds, Winnipeg, Man.; Jacques Gérin, Montreal, Que.; Walter Kubiski, Winnipeg, Man.; Edward Lavallee, Whitehorse, Y.T.; Claude Lebon, Quebec, Que.; Arthur Pape, Toronto, Ont.; R. A. J. Phillips, Ottawa, Ont.; Timothy Reid, Toronto, Ont.; Gordon Selman, Vancouver, B.C.; Lloyd Shaw, Halifax, N.S.; Roland Soucie, Moncton, N.B.; Maurice Strong, Montreal, Que.; and Richard Thompson, Green Lake, Sask.: to be members of the Provisional Advisory Council. July 15, Jean Archibald, Normand Asselin, Alan M. Clarke, Duncan Edmonds, Walter Kubiski, Marc Lalonde, Edward Lavallee, Arthur Pape, R. A. J. Phillips, Timothy Reid, Gordon Selman, Lloyd Shaw, Roland Soucie, Richard Thompson and Douglas Ward: to be members of the Provisional Council. Sept. 27, Alan M. Clarke: to be executive Director. Dec. 1, Rodolphe Lafresnaye, Bevonne Patterson, William Rompke and Juanita Westmoreland: to be members of the Provisional Council.

Defence Research Board.-1966. Jan. 17, Robert James Uffen: to be Vice-Chairman from Aug. 1, 1966. Feb. 17, John Draper Houlding, Montreal, Que.; and Allan Bishop Van Cleave, Regina, Sask.: to be members for three years from Apr. 1, 1966. Apr. 21, Wilfred Gordon Bigelow, Toronto, Ont.: to be a member for three years from May 1, 1966. May 13, Howard Hillen Kerr, Toronto, Ont.: to be a member for three years from June 1, 1966. 1967. Jan. 17, Robert James Uffen: to be Chairman from Mar. 3, 1967, vice Adam Hartley Zimmerman.

Dominion Coal Board.-1966. Feb. 21, Hon. John Watson MacNaught: to be a member and Chairman from Mar. 5, 1966.

Economic Council of Canada.-1966. Feb. 10, Roger Perreault, Economiste, Union Catholique des Cultivateurs, Montreal, Que.; R. R. Atkinson, President, National Farmers' Union, Saskatoon, Sask.; J. R. Murray, Managing Director, Hudson's Bay Co., Winnipeg, Man.; and Professeur André Raynauld, Faculté des Sciences Politiques et Sociales, Université de Montréal, Montreal, Que.: to be members for three years. FrançoisE. Cleyn, Walter Charles Koerner, W Ladyman, Stanley A. Little, Mrs. A. F. W Plumptre and Francis George Winspear: to be again members for three years. 1967. Jan. 19, Arthur R. Gibbons, Ottawa, Ont.; Hugh Allen Martin, Vancouver, B.C.; Marcel Pepin, Montreal, Que.; and William O. Twaits, Toronto, Ont.: to be again members for three years. Graham Ford Towers, Rockcliffe, Ont.; William Y. Smith, Fredericton, N.B.; and Alfred Rouleau, Lévis, Que.: to be members for three years.

Export Credits Insurance Corporation.-1966. Aug. 17, J. C. Langley, Acting Assistant Under-Secretary of State for External Affairs: to be a Director, vice A. E. Ritchie,

Farm Credit Corporation.-1966. Apr. 28, Alexander T. Davidson, Assistant Deputy Minister (Rural Development), Dept. of Forestry, Ottawa, Ont.; Stanislas J. Chagnon, Assoc. Deputy Minister, Dept. of Agriculture, Ottawa, Ont.; and Ernest A. Oestreicher, Director, Resources and Development, Dept. of Finance, Ottawa, Ont.: to be members for one year. Nov. 10, George Owen: to be a member and Chairman for three years from Dec. 9, 1966. William Harvey Ozard: to be a member and Vice-Chairman for three years from Dec. 9, 1966. Joseph Frederick Parkinson, Economic Adviser, Dept. of Finance, Ottawa, Ont.: to be a member for one year, vice Ernest A. Oestreicher.

Fisheries Prices Support Board.-1966. Aug. 10, Richard I. Nelson, Vancouver, B.C.: to be a member, vice Francis Millerd, Sr.

Historic Sites and Monuments Board of Canada.-1966. July 14, Francis W. P. Bolger, Charlottetown, P.E.I.: to be a member until June 30, 1969.

Immigration Appeal Board.-1966. Sept. 14, Jean Paul Geoffroy, Longueuil, Que.: to be a nember.

International Commission for the Northwest Atlantic Fisheries.-1966. Feb. 10, A. W H. Needler, Deputy Minister of Fisheries, Ottawa, Ont.: to be a Commissioner, vice Wilson C. MacKenzie.

International Joint Commission.-1966. Jan. 12, Donald M. Stephens: to be again a Commissioner for two years from Jan. 1, 1966. René Dupuis: to be again a Commissioner for two years from Feb. 23, 1966.

International North Pacific Fisheries Commission.-1966. Aug. 10, Donovan Francis Miller, Vancouver, B.C.: to be again a member for two years from Aug. 21, 1966.

International Pacific Halibut Commission.-1966. Nov. 10, F. W. Millerd, Vancouver, B.C.: to be again a member until Oct. 31, 1968.

International Pacific Salmon Fisheries Commission.-1966. Aug. 17, A. J. Whitmore, Burnaby, B.C.: to be a member until Oct. 31, 1966. Oct. 18, Richard Nelson, Sr., New Westminster, B.C.: to be a member for two years from Nov. 1, 1966, vice A. J. Whitmore.

Merchant Seamen Compensation Board.-1966. Oct. 6, Jean-Pierre Desprès, Assistant Deputy Minister, Dept. of Labour, Ottawa, Ont.: to be a member and Chairman, vice Gordon G. Cushing, decessed. J. Howard Currie, Director, Accident Prevention and Compensation Branch, Dept. of Labour, Ottawa, Ont.: to be a member, vice Hart D. Clark, resigned.

National Arts Centre.-1966. Dec. 1, Lawrence Freiman, Ottawa, Ont.: to be a member and Chairman. Claude Robillard, Montreal, Que.: to be a member and ViceChairman. Andrée Paradis, Montreal, Que.; Leonard A. Kitz, Halifax, N.S.; and William Teron, Ottawa, Ont.: to be members for four years. Madeleine Gobeil, Ottawa, Ont.; Robertson Davies, Toronto, Ont.; and Anson McKim, Montreal, Que.: to be members for three years. Dorothy Maude Somerset, Vancouver, B.C.; David H. Jones, Winnipeg, Man.; and Arnold Walter, Toronto, Ont.: to be members for two years.

National Battlefields Commission.-1966. Mar. 22, Renault St-Laurent, Quebec, Que.: to be a Commissioner. Oscar Gilbert, Quebec, Que.: to be Chairman.

National Capital Commission.-1966. Apr. 29, Graham Ford Towers, Rockcliffe, Ont.; Alfred John Frost, Manotick, Ont.; and Alan R. Philp, Fort Garry, Man.: to be members for three years. June 7, Gérald Gaudet, Moncton, N.B.; Warnett Kennedy, Vancouver, B.C.; and Wilfrid Carr, Ottawa, Ont.: to be members for four years. July 21, Kenneth Kane Paget, Calgary, Alta.: to be a member for four years. Aug. 26, Jane B. MacDonald, Charlottetown, P.E.I.: to be a member for three years.

National Council of Welfare.-1966. Nov. 10, Amy Leigh, Vancouver, B.C.: to be a member for three years.

National Design Council.-1966. Mar. 22, Mrs. Claude P. Beaubien, Westmount, Que.: to be a member for three years.

National Energy Board.-1966. Mar. S1, Robert D. Howland: to be again a member and again Vice-Chairman; and Douglas M. Fraser: to be again a member, both for seven years from Aug. 15, 1966. H. Lee Briggs: to be again a member until July 5, 1973. Aug. 10, Robert A. Stead: to be Secretary from Aug. 1, 1966.

National Film Board.-1966. Dec. 1, Joseph W Willard, Deputy Minister of Welfare, Department of National Health and Welfare, Ottawa, Ont.; and Phyllis Marguerite Grosskurth, Toronto, Ont.: to be members for three years. 1967. Feb. 2, R. Gordon Robertson, Clerk of the Privy Council: to be again a member for three years.

National Gallery of Canada.-1966. June 1, Jean Sutherland Boggs: to be Director.
National Joint Council of the Public Service of Canada.-1966. Sept. 8, G. G. E. Steele, Under Secretary of State: to be Chairman, vice Lucien Lalonde, Deputy Minister of Public Works, who continues as a member of the Official Side of the Council from Sept. 15, 1966. R. C. Labarge, Deputy Minister (Customs and Excise), Dept. of National Revenue: to be Chairman, vice G. T. Jackson. Sylvain Cloutier, Civil Service Commissioner, vice Ruth Addison, and F. T. Mace, Assistant Deputy Minister, Dept. of Veterans Affairs, vice G. T. Jackson: to be members (Official Side) from Sept. 15, 1966.

National Research Council.-1966. Mar. 24, Louis-Philippe Bonneau, Quebec, Que.; Balfour Watson Currie, Saskatoon, Sask.; Albert Brewer Hunt, Ottawa, Ont.; Lucien Piché, Montreal, Que.; and Leslie W. Shemilt, Fredericton, N.B.: to be members for three years from Apr. 1, 1966.

Restrictive Trade Practices Commission.-1966. Dec. 8, Albert S. Whiteley: to be a member for ten years.

Roosevelt Campobello International Park Commission.-1966. July 26, Hon. Alan Aylesworth Macnaughton, Westmount, Que.: to be a member.

Royal Commissions.-1966. Jan. 19, Hon. Ivan Cleveland Rand, Moncton, N.B.: to be a Commissioner under Part I of the Inquiries Act to inquire into the dealings of the Hon. Mr. Justice Leo A. Landreville with Northern Ontario Natural Gas Limited. Mar. 7, Hon. Mr. Justice Dalton C. Wells, Toronto, Ont.: to be a Commissioner under Part I of the Inguiries Act to make such investigation, as in his absolute discretion he deems necessary, into the complaints made by George Victor Spencer. Mar. 14, Hon. Wishart Flett Spence, Ottawa, Ont.: to be a Commissioner under Part I of the Inquiries Act to inquire fully into all statements by Cabinet Members and the Prime Minister, with reference to a case involving Gerda Munsinger, and to inquire whether the case was handled in accordance with the rules and principles normally applicable to persons having access to classified information, and into all the relevant circumstances connected therewith, and to consider fully all reports submitted to the government or any member of the government of the day and any evidence laid before them in connection therewith and any further evidence and to consider such other matters as may appear to the Commissioner to be relevant and to report thereon. May 26, Clarence Lyle Barber, Winnipeg, Man.: to be a Commissioner
under Part I of the Inquiries Act to inquire into the costs of farm machinery and repair parts. Nov. 16, M. W. Mackenzie, Montreal, Que.; Yves Pratte, Quebec, Que.; and Hon. M. J. Coldwell, Ottawa, Ont.: to be Commissioners under Part I of the Inquiries Act to make a full and confidential inquiry into the operation of Canadian security methods and procedures and to advise what security methods and procedures are most effective and bow they can best be implemented, and to make such reports for this purpose as they deem necessary and desirable in the national interest; M. W. Mackenzie to be Chairman of the Commission. 1967. Feb. S, Mrs. John Bird, Ottawa, Ont.: to be a Commissioner and Chairman of the Royal Commission on the Status of Women: to inquire into and report on the status of women in Canada and to recommend what steps might be taken by the Federal Government to ensure their equality with men in all aspects of Canadian society. Feb. 16, Mrs. Ottomar Lange, Claresholm, Alta.; Jeanne Lapointe, Quebec, Que.; Elsie Gregory MacGill, Toronto, Ont.; Mre. Robert Ogilvy, Fredericton, N.B.; Donald Gordon, Kitchener, Ont.; and Jacques Henripin, Montreal, Que.: to be Commissioners on the Royal Commission on the Status of Women.

Science Council of Canada.-1966. May 24, Omond McKillop Solandt, Toronto, Ont.: to be a member and Chairman for three years. Roger Gaudry, Montreal, Que.: to be a member and Vice-Chairman for three years. June 7, William McColl Armstrong, Vancouver, B.C.; George Malcolm Brown, Ottawa, Ont.; William Henry Gauvin, Pointe Claire, Que.; James Lorne Gray, Ottawa, Ont.; James Merritt Harrison, Ottawa, Ont.; Gordon Neil Patterson, Toronto, Ont.; Percy Ritchie Sandwell, Vancouver, B.C.; Leonard Hillary John Shebeski, Winnipeg, Man.; and Frank Howard Sherman, Hamilton, Ont.: to be members for four years. Robert Glen, Ottawa, Ont.; John Draper Houlding, Montreal, Que.; Leon Katz, Saskatoon, Sask.; Howard Earl Petch, Hamilton, Ont.; and Daniel Wermenlinger, Montreal, Que.: to be members for three years. Bristow Guy Ballard, Ottawa, Ont.; Jessie Gray, Toronto, Ont.; John William Ker, Fredericton, N.B.; Roger Larose, Montreal, Que.; Frank Campbell MacIntosh, Montreal, Que.; Cyrias Ouellet, Quebec, Que.; Edwin Ralph Rowzee, Sarnia, Ont.; Alexander Douglas Turnbull, Victoria, B.C.; and Adam Hartley Zimmerman, Ottawa, Ont.: to be members for two years. Robert Broughton Bryce, Ottawa, Ont.; John James Deutsch, Ottawa, Ont.; Frank Arthur Forward, Ottawa, Ont.; and Sol Simon Reisman, Ottawa, Ont.: to be associate members to hold office during pleasure.

Special Planning Secretariat of the Privy Council Office.-1966. June 21, John S. Hodgson, Ottawa, Ont.: to be Director of the special Secretariat on Bilingualism. Robert Elie, Ottawa, Ont.: to be Associate Director.

Tariff Board.-1966. Nov. 8, George Alexander Elliott, Ottawa, Ont.: to be again a member from Apr. 23, 1967 to July 21, 1971.

Tax Appeal Board.-1967. Jan. 17, Maurice Boisvert, Ottawa, Ont.: to be again a member from May 9, 1967 to Feb. 18, 1972.

War Veterans Allowance Board.-1966. May 26, Charles Henry Rennie, formerly of Victoria, B.C.: to be again a temporary member for a further period of six monthe from Oct. 2, 1966. William George Hamilton Roaf, Vancouver, B.C.: to be a member and Deputy Chairman from Dec. 24, 1966. June 9, John Harold McDougal Dehler, Ottawa, Ont.: to be a temporary member for a further period of one year from Oct. 15, 1966.

Yukon Territory Council.-1966. Sept. 27, James Smith, Whitehorse, Y.T.: to be Commissioner from Oct. 15, 1966, vice Gordon Robertson Cameron, resigned.

## PART IV.-FEDERAL LEGISLATION, 1966-67

Legislation passed in the first session of the Twenty-seventh Parliament from Jan. 18, 1966 to Mar. 22, 1967 (the date of Easter adjournment) is outlined in the following statement. Naturally in summarizing material of this kind it is not always possible to convey the full implication of the legislation. The reader who is interested in any specific Act is therefore referred to the Statutes of Canada in the given volume and chapter.

# Legislation of the First Session of the Twenty-seventh Parliament, Jan. 18, 1966 to Mar. 22, 1967* 

| Subject, Cbapter and Date of Absent |  |  | Sypopsia |
| :---: | :---: | :---: | :---: |
| 14-15 Eliz. II |  |  |  |
| Agriculture- |  |  |  |
|  | 156\% |  |  |
| 17 | May | 12 | An Ast to amend the Parm Credil Act increases the capital of the Farm Credit Corporation from $\$ 24,000,000$ to $\$ 40,000,000$, the effect of which in to raise the limit of the amount that the Corporation may borrow from the Coneolidated Revenue Fund from $\$ 600,000,000$ to $\$ 1,000,000,000$. |
| 34 | Joly | 11 | The Canadian Dairy Commission Act authorizes the establighment of a three-member Commiseion, the function of which ia to provide effioient producers of milk and cream with the opportunity of obtaining a fair return for their labour and investment and to provide consumers of dairy producte with a continuous and adequate supply of dairy producte of high quality. |
| 37 | July | 11 | An Act to omend the Crop Insurance Act increases the maximum contribution paysble by Canada on crop insurance premiums; increases the maximum amount of the inanance that may be effected on any cropt authorizes contributions to a province providing insurance coverage aspainst losses arising from the destruction of truit trees or perennial plants or losses arising when seeding of land intended to be used to grow an ineured erop is prevented by weather or other hazards; and makes other adminiatrative amendments. |
| 52 | Nov. |  | The Linestock Feed Assistance Act suthorizes the establishment of a Canadian Livestock Feed Board for the purpose of assisting liveatock feeders in Eastern Canads and Britieh Columbia; it empowers the Board to make paymente related to the coat of feed grain otorage and tranaportation for the benefit of liveatock feedere, to ensure the availability of adequate supplies of feed grain and to enter into direct marketing opergtions in feed grain; the Act provides for the administration of the Board and for expenditures in connection with its operations. |
| Eeenomle Derelopment- |  |  |  |
|  | 196\% |  |  |
| 11 | May | 12 | An Act to amend the Agricultural Rehabilitation and Development Act extends the application of the Act to all rural areas in Canada where projecta of the nature provided for under the Act can be advantageously undertaken whether or mot the area in queation is in whole or in part an agricultaral area. The name of the Act is changed to "An Act to provide for the rehabilitation and development of rural areas in Canada". |
| 31 | July | 11 | An Act to amend the Atlantic Deselopment Board Aet increases the amount that the Minister of Finance may credit the Atlantic Development Fund from $\$ 100,000,000$ to $\$ 150,000,000$ and provides tbat Board revenues may be credited to the Fund; authority of the Board is extended to undertake projecta alone or jointly with provinces or agencies thereof. |
| 41 | July | 11 | The Fund for Rural Economic Development Act authorizes the eatablishment of a fund for the economic and social development of special rural development areas and an advisory board for the administration of the Fund, the total of paymenta from which will not exceed $\$ 50,000,000$; the Act also authorizes the entering into agreements with the provinces for comprehensive rural development programs. |
|  | 1867 |  |  |
| 80 | Mar. | 10 | An Act to amend the Fund for Rural Economic Development Act increases to $\$ 300,000,000$ the total amount that may be oharged to the Fund for purposes of the Act. |

[^396]
# Legislation of the First Session of the Twenty-seventh Parliament, Jan. 18, 1966 to Mar. 22, 1967-continued 

| Subject. Chapter and Date of Assent |  |  | Synopsis |
| :---: | :---: | :---: | :---: |
| Pinance- |  |  |  |
|  | 1986 |  |  |
| 1 | Feb. | 8 | Appropriation Act No. 1. 1966 granta certain sums of money for the public service for the financial year ending Mar, 31, 1966. |
| 3 | Mar. | 9 | A pproprialion Act No. \&, 1966 erants certain bume of money for the publie service for the financial year eading Mar. 3t, 1988 (Main Supply). |
| 5 | Mar. | 31 | A ppropriation Acf No. 3, 1966 grants certain bums of money for the public gervice for the financial year ending Mar. 31, 1967. |
| 6 | Mar. | 31 | Appropriation Act No. 4. 1966 grants certain aums of money for the publio service for the Gnancial year ending Mar. 31, 1966. |
| 7 | Mar. | 31 | An Act to amend the Bank Act and the Quebec Savimes Banks Act extende the charters of existing banks to Dec. 1, 1966. |
| 12 | May | 12 | An Act to amend the Bills of Exchange Act permits banks to pay cheques on a Saturday or legal holiday on which they are open for businesg and enables banks to close on what would ordinarily be a businees day, permitting them to comply with labour legiglation and adjust to the business customs of a community. Adjustmente were made with respect to certsin legal bolidaye. |
| 13 | May | 12 | An Act to amend the Bretton Woods Agreements Act authorizes Cansda's acceptance of an increase in its quota to the International Monetary Fund and a corresponding increase in ita subecriptions to the resourees of the International Bank for Reconstruction and Development. |
| 20 | June | 2 | Appropriation Act No. 51986 grante eertain sums of money for the public service for the fintricial yesr ending Mar. 31, 1967. |
| 29 | July | 11 | Appropmiation Acf No. 6, 1966 grants certain sums of money for the public service for the financial year ending Mar. 31, 1967. |
| 30 | July | 11 | Appropriotion Act No. 7, 1986 grants certain sums of money for the public service for the financial year euding Mar. 31, 1967. |
| 61 | Nov. | 17 | Appropriation Act No. 8,1986 grants certain aums of money for the public service for the financial year ending Mar. 31, 1967. |
| 54 | Nov. | 28 | An Act to omend the Bank Act and the Quebec Savinga Banks Act extends the oharters of existing banke to Jan. 1, 1967. |
| 55 | Nov. | 30 | Appropriation Act No. 9.1966 grante certain sums of money for the public service for the Goancial year ending Mar. 31, 1967 (Main Supply). |
| 56 | Dec. | 14 | Appropriotion Act No. 10, 1980 grants certain sume of money for the publie aer vice for the financial year ending Mar. 31, 1967. |
|  | 1967 |  |  |
| 70 | Feb. | 17 | The Canda Deposit Inturance Corporation Act authorizes the estsblishment of the Cenads Deposit Insurance Corporation, the objects of which are to provide, for the benefit of persons having deposits with member institutions, insurance againat loss of auch deposits, to provide deposit insurance for federal institutions and to enter into contracta of deposit ingurabce with provincial institutiona; the Corporation is anthorized to examine into the affairs of member inatitutions sud to accumulate, manage and invest a deposit insurance fund and other funds accumulated as a result of its operations. |
| 73 | Mar. | 1 | Appropriation Act No. $f, 1967$ grants certain sums of money for the publie service for the Ginancial year ending Mar. 31, 1967. |
| 83 | Mar. | 10 | An Act to omerd the Small Businesses Loans Aet extends the life of the Act to Dec. 31, 1969; extends the proviaions to cover Amall construction, transportation or communtications businesses; removes certain restrictions; increases the marimum annual grose revenue limit of a amall business from $\$ 250,000$ to $\$ 500,000$ and increases the aggregate principal amotnt of all loans made to $\$ 300,000,000$. |
| 85 | Mar. | 23 | Appropriation Act No. 2, 1987 grants certain sums of money for the public service for the financial year ending Mar. 31, 1967. |
| 86 | Mar. | 23 | Appropriation Act No. 3. 1967 grants certain sums of money for the publie service for the financial year ending Mar. 31, 1968. |

# Legislation of the First Session of the Twenty-seventh Parliament, -Jan. 18, 1966 to Mar. 22, 1967-continued 

| Subject, Chapter and Date of Assent |  |  | Synopsis |
| :---: | :---: | :---: | :---: |
| Finante-concluded |  |  |  |
|  | 1967 |  |  |
| 87 | Mar. | 23 | The Bank Act is the decennial revision of the Bank Act, empowering the chartered banks to carry on business under revised legislation for a further period of ten years. |
| 88 | Mar. | 23 | An Act to amend the Bank of Canada Act suthorizes the Government, under specified conditions, to give the Bank a directive concerning monetary policy, authorizes the imposition of a minimum variable econdary reserve requirement for the cbartered banks and makes other technical changes. |
| 89 | Mar. | 23 | The Federal-Provincial Fiscal Arrangements Act, 1867 authorizes the making of certain fiscal payments to provinces, suthorizes the entry into tax collection agreementa with provinces, and amenda the Established Programs (Interim Arrangements) Act. |
| 93 | Mar. | 23 | The Quebec Sapings Bank Act is the decennial revision of the Quebec Savinge Banks Act empowering these savinge banks to earry on business under revised legislation for a further period of ten years. |
| Gorernment- |  |  |  |
|  | 1966 |  |  |
| 2 | Feb. | 23 | An Act to extend the time for consideration of objections parauant to section 20 of tho Electoral Boundaries Readjustment Act voith respect to the reports of commissions established for tho decennial census taken in the year 1901. |
| 21 | June | 2 | The Newfoundland Additional Finoncial Aesistance Act. 1966 provides for the payment to the Province of Newfoundland of an annual grant of $\$ 8,000,000$, beine additional financial assiatance contemplated by Term 29 of the Terms of Union of Newfoundland with Canada. |
| 22 | June | 2 | An Act to amend the Northewest Territories Act increases the number of elected members of the Council of the Northwest Territories from four to geven; incresses to $\$ 5,000$ per annum the maximum indemnity of elected members, provides for the payment of $\$ 3,500$ annually to appointed members, and exempte part of these indemnities from income tax; provides for the payment of reasonable travelling and living expensen for members attending eessions of the Council; and makes administrative and financial provisions in connection therewith, as well as other administrative changes. |
| 25 | June | 16 | The Government Organization Act, 1966 authorizes the establishment of several new Depariments of Government and the offices of the Ministers of thome Departments, setting out their respective powers, duties and functions; administrative and financial matters related or incidental thereto are provided for. |
| 28 | June | 16 | An Act to anend the Yukon Act incresses to 55,000 per annum the maximam indemnity payable to members of the Council of the Yukon Territory, part of which is exempt from income tax, and provides for an annual indemnity of $\$ 300$ to members of the advisory comprittee on finance; provides for payment of reasonable travelling and living erpenses for Council and committee members attending sessions or sittings; and makes administrative and financial provisions in connection therewith, as well as other administrative changes. |
| 57 | Dec. | 14 | The Manitoba-Saskatchetoan Boundary Act, 1866 declares a portion of the boundary line surveyed and marted on the groand under the direction of Commiasioners appointed therefor to be the boudary line between the Provinces of Manitoba and Saskatchewan. |
| 58 | Dec. | 14 | The Saskatchewar-Northwest Tervitories Boundary Act, 1966 declarea the boundary line surveyed and marked on the ground under the direction of Commissioners appointed therefor to be the boundary between the Province of Saskatchewan and the Northwest Territories. |
| 61 | Dec. | 21 | The Manitoba-Northoost Territories Boundary Act, 1966 deciares the boundary line surveyed and marked on the ground under the direction of the Commissioners appointed therefor to be the boundary line between the Province of Manitobs and the Northwest Territories. |
|  | 1967 |  |  |
| 71 | Feb. | 23 | The Public Service Employment Act replaces the Civil Service Act; it retains the merit syatem of appointment and promotion as well as the type of job fecurity long in effect. but extends them to prevailing rate employees and ghips' ofticers and crews: the Civil Service Commiesion becomes the Public Service Commisaion. |

# Legislation of the First Session of the Twenty-seventh Parliament, Jan. 18, 1966 to Mar. 22, 1967-continued 

| Subject, Chapter and Date of Assent |  |  | Symopeis |
| :---: | :---: | :---: | :---: |
| Government-concl. 1567 |  |  |  |
|  |  |  |  |
| 78 | Feb. | 23 | The Public Service Siaff Relations Act provides for the establishment of a system of col lective bargaining applicable to employeca in the public service of Canada, for the resolution of disputes that may arise in the negotiation of collective agreements, and for grievance procedures; it authorizes the establishment of a Public Service Staff Relations Board to be responaible for the administrstion of the Act and the constitution and appointment of other authorities and employees as are required. |
| 74 | Mar. | 1 | An Act to amend the Finoncial Administralion Act amends certain provisions of the Act relating to the functions of the Treasury Board in order to define the expanded role enviaaged for the Board in relation to the effective control and management of the public eervice, taking into account the ingtitution of colleotive barcaining within the public eervice. |
| 81 | Mar. | 10 | The Governor General's Retiring Annuity Act providea for the payment of a retirine anneity to the Governor General of Canada. |
| 84 | Mar. | 23 | The Stotutory Salarizs Revision Act, 1967 provides for the revision of oertain salaries fized by statute. |
| Health and Welfare - |  |  |  |
|  | 1906 |  |  |
| 42 | July | 11 | The Health Resources Fund Act provides for the eatablishment of a Health Resourcen Fund to assist provinces in the acquisition, construction and renovation of health training facilities and research institutions. |
| 45 | July | 15 | The Canada Assistance Plan authorizes the making of coutributiong by Canada toward the cost of programs for the provision of assistance and welfare services to and in respect of persons in need. |
| 64 | Deo. | 21 | The Medical Core Acl autborizea the payment of contributiona by Canada toward the cont of insured medical care services incurred by provinces pursuant to provincial medical care insurance plans. |
| 65 | Dee. | 21 | An Act to amend the Old Age Security Act provides for the payment of a guaranteed income eupplement to certain Old Age Security pensioners up to a maximum of 40 p.o. of the amount of pension payable under the Act; it aloo provides for the determination of the income of a penaioner for purpooes of the aupplement and other related matters. |
| Justice- |  |  |  |
| 4 | $\begin{aligned} & 1966 \\ & \text { Mar. } \end{aligned}$ | 31 | An Act to amend the Admiralty Act authorizes the appointment of up to three deputy judgea, each with full juriadiction of a District Judge in time of the latter's incapacity; it also extende the area of juriadiction of aberiffs as Marshala of the Court and provides that deputy aberiffs are to be Deputy Marabals of the Court. |
| 8 | Mar. | 31 | An Act to amend the Judges Act authorizes the provision of astaries for eight additionaljudges. |
| 23 | June | 16 | An Act to amexd an Act to amend the Combines Investigation Aet and the Criminal Code furtber extenda the exemption of British Columbia fishermed or pergons and associations engaged in the buying or processing of fish in that province from the provisions of the Act. |
| 22 | July | 11 | An Act to amend the Bankruptcy Act is an interim measure intended to provide remedies in situations where it hes been shown by experience that abuees of the bankruptey procesa are most likely to occur, to correct abures that have occurred in the administration of amall eatates and to provide special measures for the orderly payment of debts. |
| 39 | July | 11 | An Aet to amend the Exckequer Court Act is a minor amendment eliminating the use of taration stamps in the payment of fees to the Registrar of the Exchequer Court of Cauada, |
| 44 | Joly | 11 | The Statute Lav (Superannuation) A mendment Act, 1968 providee, because of the contributions required under the Canada Pension Plan, for a reduction in the contributionk to certain superannuation or pension funda or plans establisked by Parliament and for the correlation of penaions or annuities paysble under those funds or plans with the Canada Pension Plan; ertends the portability provisions of certain of thope plans; raisee the limit on the amount of the aupplementary death benefit payable to Public Service emplayees and members of the Cansdian Forces; and makes related administrative amendmente. |

# Legislation of the First Session of the Twenty-seventh Parliament, Jan. 18, 1966 to Mar. 22, 1967-continued 

| Subject, Chapter and Date of Assent |  |  | Symopsis |
| :---: | :---: | :---: | :---: |
| Justice-concluded |  |  |  |
|  | 1367 |  |  |
| 68 | Feb. | 9 | An Act to amend the Jadges Aet authorizee the proviston of salaries for two additional judges. |
| 76 | Mar. | 1 | An Act to amend the Judges Act revises judicial salaries and makes other amendments reapecting travelling expenses, etc. |
| Labour- |  |  |  |
|  | 1966 |  |  |
| 24 | Juse | 16 | An Act to amend the Fair Wages and Hours of Labour Act changes the general atandard of hours of work on Federal Government contracts from 44 houre in a week to 40 hours, provides that no wage rate less than $\$ 1.25$ an bour ahall be paid for work under such contracts, thus achieving consistency with the Canada Labour (Standards) Code. |
| 27 | June | 16 | The Troiming Allowance Act, 1966 is an Act respecting allowances to pergons being trained under teohnical and vocational training programs; jt autborizes the entering into agreements with the provinces in connection therewith and containg certain chaoges relating to the adminiberation of the Unemployment Ingurance Act. |
| 49 | July | 18 | The St. Laznence Ports Working Act ensures that the conclusione of the industrial inquiry commiesion, set up to inquire into working conditions at the ports of Montreal, TroisRivieres and Quebec, be implemented, as recommended by the mediator. |
| 59 | Dec. | 14 | An Act to amend the Canada Labour (Standards) Code makes provision for general holidaya and annual vacations in respect of employment within the jutisdiction of Parliament not previously covered is the Code beeause the employment is customarily provided for the benefit of a number of aeparate employers; tbis is particularly applicable to the stevedoring industry. |
| 62 | Dec. | 21 | The Conada Labour (Safety) Code sets out the duties of employers and employees reapecting the prevention of employment injury in federal works, undertakings and businessea. |
|  | 1967 |  |  |
| 92 | Mar. | 23 | The Pension Benefts Standards Act refers to pension plans organized and adminiatered for the benefit of persons employed in connection with certain federal works, undertakinge and businesses. |
| Revenue- |  |  |  |
|  | 1966 |  |  |
| 14 | May | 12 | The Canada-United Kingdom Income Tar Agreement Act, 1966 implements an Agreement between Canada and the United Kingdom for the avoidance of double taration with respect to taves on certain classes of income and implements a Supplementary Income Tar Agreement between Canada and Sweden. |
| 38 | July | 11 | An Act to amend the Customs Tariff implements the Customs Tariff Reaplution presented is the Budget Speech of Mar. 29, 1966 . |
| 40 | July | 11 | An Act to mend the Excise Tax Act implementh the Exoise Tax Act Resolution presented in the Budget Speech of Mar. 29, 1986. |
| 43 | July | 11 | The Public Utilities Income Tax Trantfer Act authorizes the Minister of Finance to transfer to the provinces a proportion of the income tax payable by certain publicutility companies. |
| 47 | July | 15 | An Act to amend the Income Taz Act implemente the Income Tax Reeolution presented in the Budget Speech of Mar. 29, 1966. |
|  | 1987 |  |  |
| 75 | Mar. | 1 | The Canada-Trinidad and Tabapo Income Tat Agreement Act, 1867 implements agreements for the avoidance of double taration with reapect to income tax between Canada and Trinidad and Tobago. Canada and Ireland, Canada and Norway and Cansda and the United Kingdom, and implements a eupplementary income tax convention between Canada and the United States. |
| 79 | Mar. | 10 | An Act to amend the Excise Tax Act and fke OU Ape Security Act increases the sales tax from 8 p.e. to 9 p.e. on all goods except building materials and other goods previously exempt, and also raises the old age security tax payable on the taxable income of an individual from \$120 to $\mathbf{\$ 2 4 0}$. |

# Legislation of the First Session of the Twenty-seventh Parliament, Jan. 18, 1966 to Mar. 22, 1967-continued 

| Subjeet, Chapter and Date of Absent |  |  | Synopsis |
| :---: | :---: | :---: | :---: |
| Eevenue-concluded |  |  |  |
|  |  |  |  |
| 91 | Mar. | 23 | An Act to amend the Income Tax Act and to repeal the Canadian Vesal Conatruction Assistunce Act incorporates in the Income Tax Act the provisions analogoue to thoee in the Cansdien Veseel Conatruction Absistance Act and repeals the latter. It alao implements items of the Income Tax Reaolution dealing with deferred profit-quaring and supplementary benefit plans. |
| Scientific and Industrial Research- |  |  |  |
|  | 1568 |  |  |
| 19 | May | 12 | The Science Courcil of Canoda Act providea for the entablishment of a Science Council of Canads. |
| 26 | June | 16 | An Act to amend the Research Council Aet changes the formal title of the Council to "National Researct Council of Canads", authorizes the payment of remunerstion to members for duties performed in addition to their regular duties, authorizes temporary appointments and the eatablishment of a national science library, and makea relative administrative changee. |
|  | 1967 |  |  |
| 82 | Mar. | 10 | The Induatrial Research and Development Incentioes Act providea general incentived to induatry for the expansion of scientific research and development in Canada and effects certain related amendments to the Income Tax Act. |
| Trade- |  |  |  |
|  | 1968 |  |  |
| 16 | May | 12 | An Act to amend the Export and Import Permits Act extends the duration of the Act for a further period of three yeare, to July 31, 1969. |
| 68 | Dec. | 21 | An Act to amend the Export Credits Insurance Act authorizee the Export Credita Insurance Corporation to issue unconditional guarantees to banks in conpection with transactions insured by the Corporation and to enter into agreements with foreign governmente in connection with certain transactions and reschedule debts owed to the Corporation in reapect thereof; it increases from $\$ 400,000,000$ to $\$ 500,000,000$ the maximum liability to the Corporation at any time. |
| Transportation- |  |  |  |
|  | 1966 |  |  |
| 9 | Mar. | 31 | The Miltown Bridoe Act anthorizes the construction of a bridge acronts the St. Croir River between the Province of New Brunswick and the State of Maine. |
| 10 | May | 12 | An Act to amend the Acronautice Act authorizes the imposition of charges for the use of Department of Transport facilities and eervices and of charges for their availability to aircraft during flighte within Cansda; suthorizes the eatablishment of boarde to inveatigate aircraft accidente and provides for the payment of expenses of witneses appearing before such boards; providea for an increage in the membership of the Air Transport Board, eetting terma of office and retirement age; and makee other adtrinigtrative changes. |
| 15 | Msy | 12 | An Act respecting the coustruction of a line of railway in lhe Province of Ontario by Condian National Railway Company from the vicinity of Amesdole on the Reddity Subdivision of the $C N R$ in a northwesterly direction for a distance of approximately $\hat{6}$ miles to a point in the vicimity of Bruce Lake: in the Distriat of Kenors. |
| 35 | July | 11 | Ath Act respecting the conatruction by Canadian National Railway Company of a line of raitwoy in the Province of Manitoba from the vicinity of Stall Lake on the Ckisel Lake Subdivision of the CNR in a northeasterty direction for a distance of approximately 18 miles to a point is the vicinity of Osborne Lake in The Pas Mining District of that Province, and of a line of reilway in the Province of Saskotchewan from the vicinity of Watrous on the Watrous Subdivision of the said Railuay in a northeasterly direction for a distance of approximetely 18 milss to a point in the vicinity of Guetnsey in the Regina Mining District of that Prooincte. |
| 50 | Sept. | 1 | The Maintenance of Railway Operation Act, 1936 provides for the resumption of oparations of railwaya and for the settlement of the existing dispute with respect to terms and conditions of employment between railway companies and their employees. |

# Legislation of the First Session of the Twenty-seventh Parliament, Jan. 18, 1966 to Mar. 22, 1967-concluded 

|  | bject, pter and of Asse |  | Synopsis |
| :---: | :---: | :---: | :---: |
| Transportationconcluded |  |  | The Canadian National Railwayg Financing and Guaranlee Act, 1985-1966 suthorizes the provision of money to meet certain capital expenditures of the CNR syatem for the period Jan. 1, 1965 to June 30, 1967 and authorizes the gusrantee of certain aecurities to be iseued by the CNR. |
|  | 1967 |  |  |
| 67 | Feb. | 9 |  |
| 69 | Feb. | 9 | The National Tronsportation Act defines and implements a national transportation policy for Canada and eatablishes the Canada Transport Commission as the nationsl transportstion authority to effect the objectivea of that policy. |
| Miscellineous1566 |  |  |  |
|  |  |  |  |  |
| 18 | May | 12 | The Fisheries Development Act provides for the development of the commercial fisheries of Canada through the undertaking of federal or federal-provincial projects and the financing thereof and provides for the eatablishment of advisory committees for carrying out the purposes of the Aot. |
| 33 | July | 11 | An Act to amesd the Canada Student Loans Ael increases provincial allocations for the loan year commencing July 1, 1965 and subsequent years by autborizing a supplementary allocation to a proviace applying for it amounting to 20 p.c. of the basic loan for the year; the annual basic loam is increased to $\$ 58,000,000$. |
| 36 | July | 11 | The Company of Young Canadions Act providea for the eatablishment of the Company of Young Canadians, the objects of which are to support, encourage and develop programs for aocial, economic and commumity development in Cansda and abroad through voluntary service. |
| 42 | July | 15 | An Act to amend the Canadian Corporation for the 1967 World Extibition Act increages the protection afforded to marks of the Corporation and the official symbol of the Exhibition in their application to goods or wares, and vest, in the Corporation copyright in reproductions of the site of the Exhibition and of artietic works located thereon for a limited term. |
| 48 | July | 15 | The National Arts Ceatre Act authorizes the eatsblishment of the National Arts Centre Corporation, the objects of which are to operate and maintain the Centre, to develop the performing arta in the National Capital region and to assiast the Canada Council in the development oi the perjorming arts elsewhere in Canada. |
| 53 | Nov. | 22 | An Act to amend the National Housing Act, 1954 increases the loan ratio for rental housing from 88 p.c. to 90 p.c. of the lending value; provides that loans on existing honsing be insurable on conditions similar to loans for new housing; increases to $\$ 9,500,000,000$ the amount of loans that may be insured under the Act and to $\$ 4,000,000,000$ the amount available for lending by CMHC; increasea to $8350,000,000$ the amount a vailable for student housing projects and authorizes the use of such housing for other than univeraity studente; and extends for three years the time limit relating to sewage treatment projecte. |
| 60 | Dec. | 14 | An Act to amend the Canada Lands Surveys Act makea revisions relsting to the appointment, duties sand fees of special examiners of candidates for admisgion as articled pupila with a Dominion Land Surveyor and makes certain other technical amendments to the Act, |
|  | 1967 |  |  |
| 66 | Feb. | 9 | An Act to amend the Canado Corporations Act to facilitate the incorporation by lettert patent of corporations without objects of pecuniary gain provides an effective alternative to incorporation by epecial Act for voluntary corporationa functioning in a national patriotic, religious, philanthropic, charitable, scientific, artiatic, social, professional or aporting field. |
| 77 | Mar. | 1 | The Postal Services Interruption Relief Act providea relief in certain cases against loss or hardahip as a result of interruptions of normal postal services. |
| 78 | Mar. | 10 | The Canadion Film Development Corporation Act authorizes the establishment of a Canadian Film Development Corporation, the objects of which are to foster and promote the development of a feature film industry in Canada, and provides for this purpose an appropriation of $\$ 10,000,000$. |
| 90 | Mar. | 23 | The Immigration A ppeal Board Act provides for appeala to an Immigration Appeal Board in reapect of certain matters relating to immigration. |

## PART V.-GANADIAN CHRONOLOGY

Events in the general chronology from 1497 to 1866 are given in the 1951 Year Book, pp. 46-49; from 1867 to 1953 in the 1954 Year Book, pp. 1259-1264; and annually from that year on in successive editions. A reprint entitled Canadian Chronology, 1497-1960 is also available from the Dominion Bureau of Statistics. The following listing covers the year 1966 and January 1967 and it should be mentioned that certain of the dates given therein are approximate. References regarding changes in federal and provincial legislatures or ministries are not included but may be found in Chapter II on Constitution and Government or in Appendix I.

## 1966

January: Portmsster-General Jean-Pierre Cóté announced the dismissal of Victor Spencer, Vancouver postal cierk, for bis alleged participation in a spy plot. Lucien Lamoureux, M.P. for Stormont, named Speaker of the House of Commons. Jan. S, Council of regents to advise on location and operation of new community colleges, to be formally known as colleges of applied arts and technology, announced by Ontario Education Minister Davis. Jan. 4, Second annual review of the Economic Council of Canada released. Jan. 5, Resignation from the Senate of Hon. Wishart MeL. Robertson, Speaker of the Senste from 1953-57, announced. Jon. 6. In an unprecedented agreement with the Federal Government, Ontario to undertake responsibility for Indian education, bousing. employment, etc., in the province. Jan. $6-\gamma$, Federalprovincial conference of attorneys-genera; the conference approved in principle the setting up of a Central Bureau of Information similar to "Interpol". Jan. 7, A CNR trajo stranded in Fraser Valley by snow and mud slides; sbout 200 passengers airlifted out. Convictions in Montreal for the sale of Irish Sweepstales tickets resulted in a Gine of $\$ 15,000$ for Mrs. Francis Kelly and of $\$ 20,000$ for Anthony Sullivan. Letter of Eric Kierans, acting Minister of Revenue in Quebec, to U.3. Commerce Secretary protesting guidelines asking for reduction of U.S. companies investment abroad revealed; on Jan. 11 a letter to U.B. Treasury Secretary Fowler also revealed; Kierans admitted a diplomatic error. Sending of emergency food supplies to drought-stricken areas of Africs (Zambia, Rhodesis, Bechuanaland and Basutoland) in oo-operation with Britain and Australia annouveed by Prime Minister Pearson. Jan. 7-8, Federal-provinciad welfare ministers' conference at Ottawn resulted in inereased financial sid to the provinces. Jan. 10. Death of Prime Minister Sbastri of India at Tashkent, U.S.S.R., following agreement between Pakistan and India to settle their diferences without war. First meeting of the National Indian Advisory Board held in Ottoswa. Jan. 11, Death of Senator J. W. Comear of Nova Scotia. Jan. $11-12$, Commonwealth Prime Ministers met at Lagos, Nigeris, to deal with Rhodesian political issue; Prime Minister Pearson's suggestion for action accepted. Jan. Is. Federalprovincial conference on manpower training began in Ottawa. The Federal Government announced establishment of a major test-program to upgrade the skills of the unemployed. Annoubcement of a $\mathbf{\$ 1 , 0 0 0 , 0 0 0}$ long-term losn to Ceylon for the purchase of industrial raw materials under the international development assistance program. Jan. 14, Anpouncement of Canada's intention to build a $\$ 1,500,000$ technical school in Nigeria and provide temporary teaching staff. Jan. 17-21, Strike of 27,000 students in Quebec trade and technical schools in protest against the extension of the school year by $2 \frac{1}{2}$ weeks. Jan. 18, Pledging conference for World Food Programme held in New York: Agriculture Minister Greene appointed Chairman; Canadian contribution valued at $\$ 27,500,000$ (U,S.). First session of the 27th Parliament opened; highlights of Speech from the Throne included a nationgl medioal care insurance
program, revision of the Railway Aet and the Bank Act, and eatablishment of a National Dairy Commission, a Science Council, a Development Corporation, and the Company of Young Canadians. Jan. 19, Justice Minister Cardin announced the establishment of a commission of inquiry into the case of Mr. Justice Leo Landrevilie of the Ontario Supreme Court, to be condueted by Hon. 1. C. Rand, former Judge of the Supreme Court of Canada. Mra. Indira Gandbi, daughter of India's first Prime Minister, Jawaharlal Neiru, elected the first woman Prime Minister of India. Jon. wo, Nadey Greede, Rossland, B.C. wod first place in the slalom event of the "Silver Jug" women's ski races at Bad Gastein, Austria. Jan. 2. Deferment of the Fulton-Favreau formula for constitutional amendmett, approved by a FederalProvincial Conference in 1964, anoounced by Hon. Guy Favreau, President of the Privy Council Jan. 25, The Supreme Court of Canada ruled Indians on reserves are not entitled to unrestrieted year-round hunting rights. Jan. sf, Andouncement of return of Portland Island, a gift of British Columbia to H.R.H. Princess Margaret in 1058, to the province for use as a provincial park to be known as Princess Margaret Park. Jan. S0, 100,000 Canadians aged 89 became the first persons of that age eligible for the $\mathbf{\$ 7 5}$ Old Age Security pensions. Jan. s1, The Quebec Court of Appealls reversed the contempt-of-court conviction against Montreal author Jacques Hebert, found guity Feb. 23, 1065 for statements in his book $I$ Accuse the Assassins of Cofin.
February: Feb. \&. Report of the Senate Committee on the Aging tabled in the Senate; recommendations include a guaranteed minimum jncome at age 65 sad opportunity for the senior citizen to maintain himself as a productive member of society. Feb. S. First aoft landing on the moon accomplished by U.S.S.R. unmanned space capsule Luns $I X$. Prime Minister Pearson announced economic measures against Rhodesia: (1) a bsn on ail imports of goods of Rhodesian origin and (2) a ban on all exports of Canadian goods to Rhodesis with limited exceptions, in addition to previous embargo on arms and oil and oil products. Feb. 4, Death at Baddeck, N.S., of Dr. Gilbert Hovey Grosvenof, Chairman of the Board of the National Geographic society and son-in-law of inventor Alexander Grabam Bell, at age 90. The Northwest Territories Council gave approval in priaciple to a plan to form the Territories into a providee. Fab. 6, Petra Burka of Toronto, 1965 world and Canadian women's figure skating champion, retained her Canadian title. Feb. 9. Oatario sales tax raised from 3 p.c. to 5 p.c. Feb. 10 , Plan for Metropolitan Ottawa as outlined in report by Commissioner Murray V. Jones released Aug. 9 , 1965, rejected by aimost unanimous opposition from councillors and communities involved. Strike of members of the Oshawa unit of the Toronto Newspaper Guild against the Oshaza Times, which began Jan. 27, zetiled. Correspondence with provincial premiers confirming the federal decision to raise grants to Canadian universities from $\$ 2$ to $\$ 5$ per capits of provincial population tabled in the House of Commons; the grant to the Quebed Government was understood
by Premier Lesage to be unconditional. Violence marked the 21st day of the International Brotherhood of Teamsters atrike against 14 companies in Toronto and Brantford. Feb. 11, Second National Press Club of Cenada awards for outstanding contributions to journalism presented to Ross Munro, publisher of The Canadian, and Stusirt Keate, publisher of The Vancouver Sun. Peb. 1\%, Nadcy Greene, Rosstand, B.C., won the women's slalom title at the Canadian international ski championship competitions held at Banff, Alta., the first beld in Canada under the sanction of the International Ski Federation. Feb. 14, Australia's monetary system changed from sterling to the decimsl system, both old and new currency to be acceptable for the next two years. Feb. 15. Agreement in principle between the Federal and Manitoba Governments to combine in $\$ 300,000,000$ development of the hydro potential of the Nelson River, the first phase to be completed by 1971. Feb. 16. Death of Senator Paul Heari Bouffard in Quebec, Que. Strike of 354 teachers in Hull, Que., area ended after seven weeks in the signing of a new collective sgreement; this was the last of tbree Roman Catholic teacher walkouts in the province since the beginning of 1966. Quebec Government grants to Mogill University severely reduced in comparison with grants to other universities in the province. Feb. 17, Death of Margaret Arnett MacLeod, Manitoba historian and author, in Winnipeg, at age 88. Feb. 18, Interim pay increases and bonuses for re-enlistment in the Armed Forces snnounced. Ontario's non-compulsory tuedical care scheme given Royal Assent; to come into effect July 1. Feb, 20, Desth of Fleet Admiral Chester Nimitz, Commander of allied naval forees in the Pacific in World War II. Feb. 21, Accidental death of Lieutenant-Governor Paul Comtois of Quebec in a fre that rezed the viceregal residence. Feb. \&8, Hugues Lapointe, agent general of Quebed in London, sworo in as Quebec's 22nd LieutenantGovernor. Feb. 28, Prime Minister Pearson ancounced that no inquiry would be held into the case of George Victor Spencer, the Vancouver poetal clerk who was dismissed after being named as a suspect in a spy case. Feb. 24, Contempt of court proceedings begun against 28 men charged with violating an injunction by engaging in mass picketing at Tilco Plastics Co. Ltd. in Peterborouch. Kwame Nkrumah, President of Ghana, ousted in an army revolt. Fob. 25. The eight-mile route of the $\$ 200,000,000$ east-west subway of Toronto Trapsportation Commission officially opened by Prime Minister Pearson. Ottawa City Council approved the building of the $\$ 8,400,000$ Lansdowne Park Civic Centre. Feb. 26, Accidental death of Donald William Buchanan, Ottawa, authority on Canadian and international art, photographer and former associate director of the National Gallery.

March: Mar. 1, Gold bars worth $\$ 450,000$ stolen at Winnipeg International Airport; afl but one recovered; two prison sentences resulted. Mar. \& First landing of a satelite on the plsnet Venus announced by the U.S.S.R. Mar. 3. Special gold medal presented by the Professional Institute of the Publie Service to Gen. A. G. L. McNaughton "in recognition of a Canadian who has richly endowed his country, through a lifetime of militsry and public service". Gold medals also presented to Dr. James M. Harrison, Ottawa, for leadership in geological research and to Dr. William E. Ricker, Nanaimo, B.C. for contributions to fisheries industries. Award of the 1965 Stephen Leacock Memorial medal for humour to George Bain, Ottawa solumnist for the Globe and Mail, for his book Nursery Rhymes to be Read Aloud by Young Parents with Old Children. Mar. 4, A CPA DC-8 jetliner with 72 persons aboard crashed in Tokyo; 64 persons killed, including 18 Canadiads. Demonstrations on Parliament Hilt by atudents protesting against the war in Viet-Nam; 40 found guilty May 19 of disturbing the peace and
all but eight spent two days in jail rather than pay $\$ 15$ fines. Prime Minister Pearson made an unprecedented telephone call to George Victor Spencer, postal clerk dismissed because of atleged espionage activities, in Vancouver; Spencer's complaint tbat he was not given fair treatment was confirmed; on Mar. 7, Hon. Mr. Juatice D. C. Wells of Toronto appointed commissioner to inquire into his complaints. Studebaker of Canada Limited announced abandonment of autoroobile production after 114 years in operation. Justice Minister Cardin announced the organization of a special squad of investigators and accountants to track down fraudulent bankruptcies. Mar. 6 . Connaught Park Raceway grandstand, landmark near Hull, Que., deatroyed by fre. Mar. 9. Mrs. Viola MacMillan committed for trial on charges of manipulating trading in shares of Consolidated Golden Arrow Mines Ltd.; similar charges against George MacMillan dismissed. Mar, ${ }^{10}$, The Canadian Government announced plans for drawing up guidelines for U.S. subsidiaries in Canada counter to those set up by the U.S. Government last Decenber. Mar. 11, The 100th anniversary of the union of the colonies of Vancouver Island and the Mainland marked in Victoria. Mar. 12, National Hockey League scoring record broken by 51 st goal of Bobby Hull of Chicago Black Hawks. Mar. 19, Death of Robert A. Eraerson, President of the CPR, in Montreal. Mar. 14, Bank interest increased from 47 p.e. to 54 p.c. Supreme Court Judge Wishart Flett Spence appointed to head a Royal Commission of inquiry into the case of Gerda Munsinger. Canads's first shipment of potash to Europe left Vancouver for Rotterdam. Mar. 16. U.S. astronauts Armstrong and Scott made an emergency landing in the Weatern Pacifo Ocean aiter trouble developed in spacecraft. Two U.S.S.R. doga returned safely to earth after 22 days in orbit in the satellite Cosmos 110 at a greater beight than achieved by any astronaut. Mar. 17, A $\$ 112,000,000$ federal program to improve Canads's Indian reserves announced, the money to be spent on bousing, water supply, ganitation facilities, electrification of homes and improved roads. Mar. 18, Pope Paul VI lifted the excommunication of Roman Catholics married outside their church and abolished the muxed marriage pledge by nonCatholics to raise childred in the church. Mar. 24, Canada won the Scotch Cup international curling championship at Vancouver. An agreement be tween the Quebec Goverament and the Provincial Civil Servants Union, providing waye and salary increases, averted a threatened strike of 41,000 employees. Mar. 26, Bob McLean of Vancouver, Capada's 1965 car-racing champion, killed in a race at Sebring, Florida. Mar. 27 , The first allCanadian space project began with the launching of a $350-\mathrm{lb}$. scientific instrument package on a Black Brant rocket from the Churchill researeh range; its purpose is to probe the aurora borealis and upper atmosphere. Mar. \%9, Dow Brewery Ltd., of Quebec, Que., announced intention to destroy $1,000,000$ gallons of beer following the deaths of 16 area men with cardiac troubles who had consumed large quantities of beer. Death of Senator Allan Lee Woodrow, in Toronto. Mar. s0, France announced plans to withdraw from NATO and requested removal of U.S. and Canadian military installations. Death of Senator F. Gordon Bradley, in Bonavista, Nfld. Trial of Raymond Denis on charges of corruptiy offering money to Pierre Lamontagne, acting on behalf of the U.S. Government in opposing bail for Lucien Rivard, declared a miatrial by presiding Judge Costello; a new trial expected.

April: Apr. 4, Announcement that Csnads will assist Kenya in a five-year $\$ 350,000$ project to increase wheat production. External Affaits Minister Martin announced, as an ald measure. Canada's forgiveness of the remaining payments by India on two losns made in 1958 for purchase of Canadian wheat and flour. Apr. $\overline{\text { E }}$, Announce-
ment of an enlarged long-term agreement to sell whest to Communist China to the amount of $8550,000,000$ over the next three ycars. The House of Comroons, in a free vote, rejected the abolition of the death penalty for convicted rourderers. Apr. 6. Prime Minister Pearson outlined plans to promote bilinguslism among public servants, to include bigber pay for positions requiring both languages, language training and establishroent of a Special Secretarist on Blingualism. An expanded Office of Canadian A.ffairs established within the U.S. State Department. Apr. 7, Joho Hunter Campbell, former Ontario Securities Commission director, acquitted on \& charge of breach of trust involving share trading in Windfall Oilo and Mines Ltd. and Chesterville Mines Litd. stocks. Apr. 9, George Victor Spencer, who was dismissed from the federal Civil Service on suspicion of espionage activities, found dead in his home in Vancouver; death ruled due to natural csuses. Apr. 11-17, Named to the News Hall of Fame during National Press Week: the late Jobn W. Dafoe, former editor of the Winnipeg Free Press; Arthur Ford, iormer vice-president and editor-inchief of the London Free Press; and Gérard Filion. former editor of Le Devoir. Apr. 1s, The U.S.S.R. inaugurated its first North Atlantic passenger liner service with the departure of the Alexandr Pushkin frow Leningrad for Miontreal. Apr. 14. Carl Willis, Charlottetown, P.E.L., won the Canadian plowing championship at Cbilliwack, B.C. Apr. 16. CBC President J. Alphonse Ouimet announced that Patrick Watson and Laurier LaPierre, cohoste on the controversial program This Hour Has Seven Days, would be replaced. Seven men found guilty in Montrest of participating in the $\$ 1,400,000$ mail robbery of Mar. 31, 1964; sentenced Apr. 22 to 25 and 35 years imprisonment. Edmonton. Oil Kings defeated Oshawa Generals in junior bockey finals to win the Memorial Cup. Apr. 16. Drumheller aliners defeated Sherbrooke Beavers in senior hockey to win the Allan Cup. Premier Ian Smith of Rhodesis announced his country's decision to sever remaining diplomatic ties with Britsin, and ordered the closure of the British Mission in Saligbury and Rhodesia House in London. Apr. 17. Five-day strike of construction workers affecting all construction projects on Montreal Island except Expo 67 ended with acceptance of 3 threeyear contract. Apr. 20, Alex Colvilie, Sackvile. Y.B., awarded 39,000 for his set of designs to appear on Canadian Centennial coins. Apr. 2\%. Yyon Dupuis. St. Jesn, Que., forwer federal Minister without Portfolio, found guilty of peddling influence in trying to obtain a racetrack permit. Apr. 23, A gold-covered Bible presented to the management of Toronto's Royal York Hotel, marking the $5,000,000$ th Bible placed in circulation by the Gideons International Movement. Apr. ${ }_{26}$, Approval given by the federal Cabinet to the Supreme Court of Canada review of the case of Steven Truscott, whose conviction seven yeara earlier at age 14 for the strangling of 12 -year-old Lynne Harper and subsequent sentence to death was the subject of a book by Mrs. Isabel LeBourdais in which it was contended that be was a victim of a miscarriage of justice. Apr. so. Pians announced for the development by the National Capital Commission of a large marine-recreation complex on the Quebec side of the Ottawa River across from the Rideau Falls, to be called Portage Champlain and completed in June 1967.
May: May 1, Ceremonies commemorating the Batte of the Atlantic conducted at the National War Memorial in Ottawa. Threatened strike of CBC producers over the dispute regarding the Seven Days program suspended with the appoithtment of Vancouver Sun publisher Stuart Keate as mediator. End of 14 -week strike of members of the Teamsters union that disrupted transport across Ontario: a pay increase of 70 cents an hour and the establishment by stages of a 40 -hour week granted. May \&, A three-week strike of teachers
in provincial schools in Quebec ended with the siguing of a new contract; the union demand that legal action against 13 of its leaders be withdrawn was not acceded to. May B, Wilno, Ont., the oldest Polish community in Canada, celebrated the 1.000 th year of Christianity in Poland. Dr. A. E. Porsild, ehief botanist of the National Museum of Canada, awarded the Massey Medal for his contributions to knowledge of the Canadian Arctic. Dr. E. Irving, Dominion Observatory geologist, awarded a gold medal by the Mining, Geological and Metallurgist Institute of India for his work in the geology of Gondwanaland. May 4. Appointment of Dr. Jean Sutherland Boggs as frrst woman Director of the National Gallery of Canada. Ian Sinclair, Montreal, elected president of the CPR. May 6 . One kilied and three injured in bomb explosion at a strike-bound shoe manuiacturing plant in Montreal; six members of Front de Libération du Quebea comraitted for trial on Nov. 19 on eharges of non-capital murder. The Montreal Canadiens won the Stanley Cup, symbol of hockey supremacy, over Detroit Red Wiags. Mr. Justice Dalton Wells, commissioner inquiring into the George Vietor Spencer case, released a transcript of evidence given at hearings held in Ottawa Apr. 13-15. May 6. H.M. Queen Elizabeth II officially opened the bew Commonwealth Building of London's pioneering Dost-graduate medical school; Canadians contributed $£ 300,000$. May 7, Final report of the Parent Royal Commission on Education in Quebec made public; its 74 recommendations include provision for nod-denominstional education, local school re-organization and creation of an Indian education service. May $g$, China detonated its third nuclear bomb. Long: shoremen in Montreal, Trois-Rivieres and Quebec went on strike for the second time in three weeks, again over a dispute regarding parking privileges. May 9-July e9, About 1,600 professional civil servants in Quebec on strike to support their demand ior incressed salaries. $M a y 10$, Resignation of Nelson Castonguay 23 Chief Electoral Officer. May 12, An Act to establish a Science Council of Canada given Royal Assent. The new flag of Manitoba raised on the 96th anniversary of the creation of the province. May 18, Hon. J. C. A. Cameron appointed Chairman of the Board of Conciliation established to deal with the dispute involving 22,000 non-operating CNR employees. May 1\%, Anonouncement that the Federal Govern-ment-sponsored Medicare will begin July 1, 1967 in the provinces prepared to eo-operate. May 18. Paul Joseph Chartier, 45, Bonneyville. Alta. killed in the premature explosion in a wastroom of the Parliament Buildings, Ottawa, of a bomemade bomb which he evidently intended to throw onto the floor of the House of Commons from the public gallery. May 25, The Bahamas obanced their currency from sterling to the decimal system. May 20, Guyana, formerly British Guiana, atter 135 years of British rule became an independent nation and the 23 rd member of the Commonwealtb. May 30 and July 11 , Provincial election held in Prince Edward Island resulted in defeat of the Progressive Conservative Party; Hon. Alex B. Campbell became Canads's youngest premier; party standing was 17 Liberals and 15 Progressive Conservatives May 31, The 1965 Governor General's literary awards made to: Alfred Purdy (poetry in Engish); James Eayrs (non-fiction in English); Andre S. Vachon (non-fiction in French); Gilles Vigneault (poetry in French); and Gérard Bessette (fiction in French).
June: Dr. Helen K. Mussailem, Executive Director of the Canadian Nurses Aesociation, received award of the Teachers College Nursing Education Alumni Association for diatinguished achieverment in nursing research and scholarship; presentation was made at the annual dinner of the American Nurese Association in San Francisco. June-July. Ceremonies in France commemorating the soth anniversary of Canadian participation in the

Battles of the Somme in 1916. June 1, Senator Marians Jodoin, 84, Montreal, Senator Thomas Alexander Crerar, 89, Winnipeg, Senator Clarence Veniot, 80, Bathurst, N.B., and Senator William H, Taylor, 76. Brantford. Ont., retired from the Senate. Juns 2, U.S. satellite Surveyor I launched May 30, landed on the moon and seturned photos indicating that the surface seemed suitable for landiags of manned craft. Unveiling of portrait of former Speaker Alan Macnaughton, painted by Lillias Newton of Ottaws, to be bung in the gallery of former Speakers in the Centre Block. June 3-6, Two U.S. astronauts in the Gemini 9 rocket in three-day flight which included rendezvous with a target satellite and a walk in space, the latter cut short by defective faceplate. June 5, Andre Durocher, convicted holdup man and eseape-mate of Lucien Rivard, found hanged in QPP Headquarters the day before be was to be charged with the deaths of André Paquette and Alice Rioux, whose bodies were found buried near Piedmont, north of Montreal. Provincial election in Quebec; Union Nationale Party under Daniel Johnson elected. Edwin Godfrey Newman, Bella Bella, B.C., became the first native Indian to be appointed a magistrate and judge of the family and children's court. June 6. The 75th anniversary of the death of Sir John A. Macdonald commemorated at Queen's Park in Toronto. $\$ 12.000$,000 bequest to the Canada Council from the late Dorothy J. Killam announced. June 7, The Presbyterian Cburch voted 133-72 in favour of ordination of women. Twenty-six of 27 mem charged with criminal contempt for picketing a Peterborough plasties plant in defiance of a court order were found guilty. June S, The Centenary of the first convening of Parliament in Ottawa noted by Rt. Hon. J. G. Diefenbaker in the House of Commons. June 9, First woman to hold the post of foreign ambassador to Canada. Dora Alencar de Vasconcellos of Brazil, arrived in Ottawa. Jure 10 , The federal Department of Justice announced launching of investigation into alleged multi-million-dollar credit frauds by some bankrupt firms. Agreement signed by the CPR and the National Harbours Board ended 30-year legal argument over ownership of Vancouver's wateriront and paved the way for redevelopment of the area. Juns 11. Dave Bailey. Toronto, became the first Canadian to break the fourminute mile ( $3: 59.1$ ). At Springfield, IHl, Prime Minister Pearson received one of the 1966 Atlantic Union Pioneer Awards for leadership in uniting NATO countries into a federal union. June 18, Death of Daniel Leo Dolan, career public servant and diplomat who organized and became Director of the Canadisn Travel Bureau. June 13, Dr. Geoffrey Hattersley-Smith of the Defence Research Board presented with a Royal Geographical Society gold medal for his glaciological investigations in the Canadian Arctic. June 14, The 39day strike of Quebec longshoremen, halting operations in the ports of Montreal, Quebee and TroisRivieres, ended with the granting of a 34 -p.c. increase and establishment of a federal inquiry to negotiate other problems. June 15. Mr. Justice Meunier of the Quebec Superior Court, convicted oi perjury in 1964, granted a new trial by the Quebec Appeal Court. External Affairs Minister Martin confirmed in the House of Commons that Chester Ronning, retired diplomat and expert, on Far Eastern affairs, was on a mission for the Federal Government believed to be connected with possible peace negotiations in North Viet-Nam. June 16 , A strike of 4,253 sales employees of Air Canada that threatened to ground the airline averted by a last-minute wage settlement. Threatened strike of St. Lawrence Seaway operating employees averted by an agreement increasing wages by 20 p.c. retroactive to Jan. 1 and an additional 10 p.c. in 1967. June 19, Ceremony held in Toronto marking 75th anniversary of the first Ukrainian settlers in Canada. June z0, Conclusion of a $\$ 800,000,000$ contract between Canada and the
U.S.S.R. for the purchase of Canadian wheat and flour announced. June 2t, Designation of the birthplace of Col. John McCrae, suthor of the poem In Planders Fields, at Guelph, Ont., as a national bistoric site; to be restored in co-operation with the City of Guelph. June 29, Senator Keith Davey accepted the commissionership of the Canadian Football League. June 2S, Provincial election held in Manitoba: Premier Duff Roblin's Progressive Conservative government returned for a fourth term. June ${ }^{8} 5$, Titled Hero, Canadianbred horse owned by Peter K. Marshall, Toronto, wod Qupen's Plate. June 27, Russian parliamentarians led by Dmitry Polyansky began 10day visit to Canada.

July: July 5, The late Busher Jackson and Fred Cook elected to Hockey Hall of Fame. July G, Prime Minister Pearson announced grants and development loans to Commonwealth countries in the Caribbean to the extent of $\$ 71,000,000$ over fiye years. July e-8, Cabada-Commonwealth Caribbean Conference heid in Ottawa. July 7, A Bill to incorporate the Bank of Western CanadaCanada's ninth bank and the first new Canadianfinanced bank in 50 years-passed by the Senate. July 8, Eleven staff members of This Hour Hot Seven Days left or were dismissed by the CBC. July 9-10. Memorandum of Association signifying the union of the two largest Civil Service staft associations-the Civil Service Federation and the Civil Service Association and their affliates-with a membership of some 115,000 , signed. July 11 , Death of Gen. A. G. L. McNaughton, scientist, former President of the Netional Research Council, Commander of the first Canadian Army Overseas in World War II and Cazadian Cbairman of the International Joint Commission. July 12 Agreement signed between Canada and Trinidad and Tobago under which Canada will supply modern port-handling equipment up to an amount of $\$ 350,000$ to Port-of-Spain. July IS, Loan agreement signed making $\$ 600,000$ avaitable for the expansion of the school system in Jamaica. Parliamentary Committee on Consumer Credit given s special mandate to investigate living costs; study opened Sept. 28, with food prices the first topic of inquiry. July 14, Mrs. J. E. Ahern of Halifax appointed judge of the Halifax Citizenship Court the first woman to be appointed to such ofiee in Canada. July 15, An Act to set up a Crown agency to operate the $\$ 38,000,000$ National Arts Centre in Ottawa received Royal Assent. Four Rear Admirals confirmed their requests for early retirement in the dispute with Defence Minister Hellyer over integration of the Armed Forces. July 15-18, Non-medical workers at Quebec hospitals, jncluding seven in the Montreal ares, went on strike, demanding increased wages and a new work contract. July 16, Federal grant of $\$ 2,000,000$ to the endowment of the Vanier Institute of The Family approved. July 21, George and Viola MacMillan, prominent figures in the Canadian mining industry, committed for trial on two charges each of fraud in influencing the market price of Windfall Oils and Mines sbares. July 22. U.S. astronauts completed a three-day trip in Gemini 10 after setting an altitude record and achieving the first dual rendezvous. July $26_{\text {j }}$ Farmers in various parts of Ontario obstructed highway traffe with tractors in demonstrations of protest against provincial agriculture policies: otherg on July 27 marched to the Legislative Buildings. Martine van Hamel, Toronto, won junior class of international ballet competition in Bulgaris. External Affairs Minister Martin announced an additional grant in aid available to Zambia to help with "the economic problems resulting from actions of the Smith regime in Rhodesia": July 26. Report of Mr. Justice Dalton Wells found George Victor Spencer, former federal postal elerk, guilty of gross misconduct in supplying information to Russia and that the government of this country would have been culpable if they had
not discharged him; the report stated that he had been treated with forbearance and fairness. July 31, The Union Station in central Ottawa closed after 57 years of operation; a new station in the Alta Vista area came into use. 9,000-ft. Mount William Booth in the Ram Range of the Rocky Mountains named in honour of the founder of the Salvation Army in commemoration of the Army's centennial year.

August: Aug. 2. Express handlers in Montreal and Toronto began a wildcat strike; the railways imposed embargoes on express and small goods shipments. Six of the eight provinces represented at the Premiers' Conference in Toronto rejected the proposed federal medicare scheme scheduled to come into effect July 1, 1967. Long-distance telephone service inaugurated between Inuvik, N.W.T., and the "outside" world. Aug. 3, The Riot Act read to more than 250 transient tobacco workers in Delhi, Ont., demonstrating against the accommodations provided; nine arrested on charges of causing a disturbance and unlawful assembly. Aug. 4, Gen. J. V. Allard, Chief of the Canadian Defence Staff, announced the formation of an Armed Forces Council composed of senior officers at Headquarters in Ottawa and the Commanders of all six Commands to consider the steps by which integration and unification of the Forces will be carried out; first meeting held Aug. 10. Non-medical workers in Quebec hospitals returned to work following acceptance of a new 30 -month contract and an 18-p.c. wage increase. Aug. 4-8, A wildcat strike at the Steel Co. of Canada Ltd. plant in Hamilton, Ont., in protest against slow contract negotiations put 16,000 persons out of work; violence and 29 arrests took place during the interval; later the workers rejected a contract offer that would have made them the highest paid steel workers in the world by Aug. 1, 1967. Aug. 7, Ceremony at Lethbridge, Alta., commemorating the first flight over the Canadian Rockies in 1919; Ernest C. Hoy, who made the flight from Vancouver to Lethbridge in 14 hours 8 minutes, attended. Aug. 8, Death in Toronto of Edith M. Mairs, 93 , organizer of the Girl Guide Movement in Canada. Aug. 10, Collapse of the $\$ 2,500,000$ Heron Road Bridge under construction over the Rideau River in Ottawa which killed eight persons and injured more than 50 . World Bridge trophy won by Brian Pauls of Winnipeg. Aug. 18, Eighth British Empire Games closed in Kingston, Jamaica; of 1,037 athletes from 35 countries, the 108 Canadian contestants won 14 gold medals, 20 silver medals and 23 bronze medals, and established two world records. Aug. 17, A Book of Paris fashions from 1797 to 1897, a Centennial gift from Mme Héloise Gauthier in memory of her daughter, Solange Karsh, presented to the National Library. Aug. 19, Georges Lemay, publicized by the Early Bird satellite as Canada's most wanted fugitive who was captured and later escaped from the Dade County Jail in Miami in September 1965, arrested at Las Vegas, Nevada. Mr. Justice Ivan C. Rand, retired Justice of the Supreme Court of Canada, appointed to head Ontario's Royal Commission of inquiry into the use of injunctions in labour disputes. Aug. 21, Laying of cornerstone of Visitors Pavilion at Roosevelt-Campobello International Park, New Brunswick, attended by U.S. President Johnson and Prime Minister Pearson. Aug. 24, Original handwritten manuscript of Sunshine Sketches of a Little Town, by Stephen Leacock, presented to the Stephen Leacock Memorial Home at Orillia after its purchase for $\$ 20,000$. Aug. 25, The Canadian Union of Postal Workers announced demands for a $50-$ p.c. increase in pay for postal workers with the threat of a strike if not granted. Aug. 26, About 118,000 railway workers belonging to 17 unions went on strike across Canada in support of wage increases averaging 30 p.c.; telecommunications, air express and all but first class mail were shut down and ferry service to Prince Edward Island was halted;

Parliament recalled Aug. 29 to deal with the strike. Aug. 27, Death in Toronto of J. B. McGeachy, well-known radio and television personality and newspaperman. Aug. 29, Report of Mr. Justice Rand into the involvement of Mr. Justice Leo Landreville in stock dealings of Northern Ontario Gas Co., tabled in the House of Commons; his findings ruled Mr. Landreville unfit for office. Gilles Grégoire, M.P. for Lapointe, announced his decision to sit as an independent member after accepting the presidency of a Quebec separatist party. Aug. s1, Death of Alexis Caron, M.P. for Hull, Que.

September: Sept. 1, Royal Assent given to Bill ending seven-day strike of railway workers; interim wage increases totalling 18 p.c. granted and provision made for compulsory arbitration. Sept. $4-15$, Commonwealth Prime Ministers' Conference held in London; Rhodesia was principal topic of discussion. Sept. 6, Prime Minister Hendrik Verwoerd of South Africa assassinated in House of Assembly; John Vorster succeeded him as Prime Minister Sept. 13. Sept. 8, Provincial election in Newfoundland; Liberal Party under Premier Smallwood returned to office for the sixth time with his greatest majority. Postponement of the national medicare plan until July 1, 1968 announced. The Saskatchewan Government passed the Essential Services Emergency Act at a special session of the Legislature providing for compulsory arbitration without appeal in labour disputes involving workers in essential services. Sept. 10, The United Church of Canada approved principles of union with the Anglican Church. Sept. 12, Provincial election in British Columbia; Social Credit Party under Premier W.A.C. Bennett returned to office. The CNR and CPR announced a 10 -p.c. increase in freight rates. Sept. 12-23, American Regional Conference of the International Labour Organization held in Ottawa, the first time outside of Latin America. Sept. 14, Dr. Gilbert C. Monture, Ottawa, awarded the Vanier Medal by the Institute of Public Administration for his "public service in Canada and abroad". Sept. 14-15, Federal-provincial conference of finance ministers held in Ottawa; discussion centred on a new tax-sharing formula. Sept. 15, U.S. astronauts in Gemini 11 completed a three-day space flight in which former records of height, speed and docking with a target satellite were exceeded. Hugh MacLennan, Montreal, and George-Henri Levesque, Lac St. Jean area, presented with $\$ 15,000$ Molson prizes for outstanding achievement in the arts, humanities and social sciences. Death in Toronto of Leonard W. Brockington, noted lawyer and public servant. Sept. 19, Simonie E7-551, Frobisher Bay, became the first member of the Eskimo race to be elected to the Council of the Northwest Territories in the first territorial election held in the Eastern Arctic. President Leopold Senghor of Senegal arrived in Ottawa at the invitation of the Governor General of Canada for a 10 -day visit. Sept. 20, Agreement signed by Federal and New Brunswick Governments for expenditure of about $\$ 114,000,000$ during the next ten years in a comprehensive war on rural poverty. The 21st session of the UN General Assembly opened under the chairmanship of External Affairs Minister Martin. Sept. 22, Cuban embassy in Ottawa rocked by shots from a bazookstype gun believed to have been fired by Cuban nationalists. Sept. 28, Death in Ottawa of Senstor Charles L. Bishop. Sept. 28-Oct. 5, Twelfth Commonwealth Parliamentary Associstion Conference held in Ottawa; nearly 200 delegates attended; Rhodesia problem paramount. Sept. 29 , Pay increase of 13.8 p.c. announced for the Armed worces. Eight persons arrested when $\$ 3,000,000$ labour leaders jailed for contempt of court during demonstrations in May at the Lenkurt Electric Co. plant in Burnaby, B.C.

October: Oct. 1, Television broadcasting in colour insugurated. Oct. 2, Dr. Rowens G. D. Hume, 88. Canada's oldest woman doctor, murdered in her Toronto bowe. Oct. 6. Report of the Spence Commission on the Munsinger affair tabled in House of Commons; althougb no actual breach of security was evident, the affair was regarded as a "startling" security riek to Canada and former Prime Minister Diefenbaker was censured for retaining Mr. Sévigny in the Cabinet and former Justice Minister Fulton for not investigating the case further; the present Government was exonerated and aj' allegations by Justice Minister Cardin in the House of Commons were substantisted. Och. 6. Housewives in Ottawa area began a boy cott of supermarkets in protest against high food prices similar action was taken in other parts of Canada. The Quebec Cabinet approved the signing of a 40 -year agreement between HydroQuebeo and British Newfoundland Corporation whereby Quebee will purchase power from the Churchit Falls hydroelectric project in Labrador. Tbe Carruthers report on the Northwest Territories tabled in the House of Commons; postponement of provincial status reoommended. Oct. \%, Resignation of J. Alphonse Ouimet as President of the CBC announced by Prime Minister Pearson; to take effect after parliamentary approval of revised Broadcaating Act. A bus-train collision in Dorion, Que., killed 10 persons, almosit all teenagers. Prime Mintater Pearson announced that the South Saskatchewan Dam, soon to be completed, will be designated the Gardiner Dam in honour of the late Rt. Hon. James Garfield Gardiner, a former Premier of Saskatchewan, and federal Minister of Agriculture for 22 years. Oct. 11, Report of the committee study of election expenses, commenced in 1964, tabled in the House of Commons; recounmendations included full disclosure of election spending by parties and candidates, equal free broadeast time to all national parties within the four weeks preceding election, limited mailing subsidies, spending limit of 10 cents an elector on advertising by an individual candidate, etc. Ocl. IS, $\$ 1,000,000$ mail robbery at Montreal International Airport. Eleven died in explosion and fire in Monsanto Cansda Ltd. chemical plant in Montreal. Oct. 14, White Paper on Immigration tabled in the House of Commons; deaigned to remove discrimination and extend sponsorship privileges. Oct. 17, Montreal's first subway the Metro, went into public use. Ontario's first community college, Centennial Colliege of Applied Arts and Tecbnology, opened in Scarborough. Oct. 18, Hon. Lionel Chevrier. High Commissioner for Canada in London, appointed CommissionerGeDeral of State Visits in 1967; Lt.-Gen. Howard Graham to co-ordinate Royal Visits and Lt.-Gen. Robert Moncel to co-ordinate visits of Heads of State. Oct. 19, Announcement of agreement between Britain and Canada for sale of uranium oxide from the Eliot Lake area in Canada during the 1970s Report of the Royal Commission of inquiry into working conditions in the Post Office Department tabled in the House of Commons; widespread improvements in working conditions and new attitudes toward enployer-employee relations recommended. Approval for construction of the first stage of the Mines Research Eatablishment near Ottawa announced; first contract awarded Oct. 26. Oct. \&1, Coal' mine slag heap in Aberfan. Wales, buried a school and然veral homes, killing 116 children and 28 adulta. Oct. \$4, Canads's first satellite communications station, SATCOM, began commercial operations near Mill Village, N.8. Twenty-first andiversary of the United Nations, Oct. 24-88, Federal-provincial premiers fiscal conference held in Ottawa; concessions to provinces ior next year include about $\$ 150,000,000$ more in equalization grants and about $\$ 150,000,000$ more in aid to educstion. $O c t$. 25 , The Appeal Court of Ontario upheld the convictions of 26 union members for contempt in picketing Tilco Plastica plant in Peterborough.

Oct. 27 , The UN General Assembly voted to end South Africa's mandate over South West Africa. Oct. 30. Death of John Drainie, Toronto, outgtanding Canadian radio, stage and television actor.
November: Nov. 1. INCO announced plans to more than double the production of nickel in the Tbompson area of Manitoba, expenditures to be about $\$ 100,000,000$. The Canadiana Room, a collection of early Canadian art, bandicrafts and furniture assembled by Prime Minister and Mrs. Pearson in the oftial residence, officially opened by Mrs. Pearson. Noo. S, Mr. Justice E. M. Hsll, Chairman of the Royal Commission on Health Services, presented with the Broniman prize for 1966 of the American Public Health Associstion for public health achievement. Nov. 4, Fioods devastated northern Italy, submerging Florence and Venice; 100 drownings reported and untold damage done to priceless works of art. Air service between Montreal and Moscow began; agreement signed by Canada and the U.S.S.R. July 11. Prime Minister Pearson announced a gift of $\$ 100,000$ to the UN Children's Fund in memory both of the children of Aberfan and of Dorion who died in an accident Oct. 7. Noy. 10, Mr. Justice André Montpetit appointed mediator in dispute between the Federal Government and postal employees in an effort to avert a Christmas mail strike; settlement effected Nov. 15 by a $25-$ cent-an-hour pay increase and a contract to the end of July 1967. Nou. 11, Canada elected to a two-year term on the UN Security Council. Noo. $11=19$, Royal Agricultural Winter Fair held in Toronto; Larry Hixt of Beiseler, Alta., won world championship wheat title for second straight year; James Day, Oak Ridges, Ont., on Canadian Club won the Prix des Nations in the international horse-show jumping competitions; and David Hasson, Ariss, Ont., won the Queen's Guineas for his Aberdeen Angus steer. Nov. 15, Death in Quebec City of Mne Louis St. Laurent, wife of former Prime Minister St. Laurent. Now, 14, Flight of U.8. astronsuts in Gemini is completed Gemini series designed to determine man's physical limitations in orbit. Increases in disability pensions and war veterans allowances announced. Nou. 14-\$S, First strike in the 29 years of Air Canada by machinists and auziliary workers; flights resumed following new contract increasing wages 20 p.c. and fringe benefits 7 p.c. Nov. 16 , Prime Minister Pearson announced the appointment of a Royal Commission headed by M. W. Mackenzie, former Deputy Minister of Trade and Commerce, to conduct an investigation into Canada's national security. Death at St. Jobn's. Nild., of Dr. Cluny Macpherson, 87, eredited with inventing the first gas masks used by Alied troops in World War I. Nov. 17, The UN Gemeral Assembly called on Britain to end rebellion of Rhodesia, using force if necessary. Nov. 21, Bower Edward Featherstone, a Federal Government employee in the Mapping and Survey Section of the Department of Energy, Mines and Resourees, charged with obtaining and retsining copies of a confidential chart relating to Cansda's maritime defence. Nov. 22. Canada Council Medals for contributions to Canadian arta, humanities and social sciences presented to Morley Callagban auther; W. A. Mackintosh, economist; Norman McLaren, film-maker; and Jean-Paul Riopelle, painter. Nov. 2S. The Ontario Securities Commission began an investigation into the Ginancial affairs of Prudential Finance Corp. Ltd., now under the control of a trustee. Nov. 26, Canada to contribute $\$ 500.000$ to a special Caaadian Fund for aid to the people of Italy suffering from disastrous floods; public subseriptions invited. Riots in Vancouver on the eve of Grey Cup game. Nov, 26, The Saskatchewan Roughriders won the Grey Cup for the first time. defeating Ottawa Rough Riders 29-14. Noy. \$9, At inquest into deaths of nine workers. deficiencies in the supporting wooden framework blamed for
the collapse of Heron Road Bridge on Aug. 10 ; O. J. Gaffiney Construction Co. of Stratford and M. M. Dillon Consulting Engineer Co. of London held responsible. Nov. \$0, Barbados became an independent nation within the Commonwealth after 339 years of British rule.
December: Dec. 7 , Death of Senator Stanley S. McKeed of Vancouver. Dec. 2, Joseph B. Brien, President of insolvent Prudential Finance Corp., grrested on theft. forgery and uttering charges. U Thant reappointed Secretary General of the UN for a five-year term. Death in Toronts of Ralph Allen, war correspondent, author and editor. Dec. 8, B.C. longshoremen's strike ended after three weeks. Dec. 10. Canadian women's curling team from Unionville, Ont., skipped by Mra. Helen Jewett. won the world championshig in Scotland. Dec. 14, Royal Assent given to Act to Incorporate the Bank of British Columbia. Presentation of the first Outstanding Achievement Award of the Public Service of Canada to Dr. Wifrid Bennett Lewis, senjor Vice-President (Science) of Atomic Energy of Canada Limited, by Mme Georges P. Vanier at Government House. Dec. 16, Threatened strike of air traffe controllers scbeduled for Dec. 20 averted by agreement of Federal Government to pay salary inereases averaging 13 p.c. Dec. 19, Fipance Minister Sharp announced a 1-p.c. increase in the federal sales tax and higher payments for those in the higher income brackets for Old Age Security Tax. Dec. 20, Report of the Commons-Senate Special. Joint Committee on Credit and Prices tabled in the House of Commons; recommendations include establishment of a government Department of Consumer Affairs, more simplified information concerning consumer prices and wider consumer education. Dec. 21, The Medical Care Act received Royal Assent; to come into effect July 1 . 1968. An amendment to the Old Age Security Act received Royal Assent; provides for an additional $\$ 30$ a month to needy persons on the $\$ 75$ old age pension. Eight children died in the collision of a school bus and a sand truck near Windsor, Ont. Death in Toronto of Capt. Merton Westey Plunkett, who organized the World War I entertainment group known as the Dumbells. Dec. Zs. Premier Thatcher of Saskstehewan announced that the farm home near Borden. Sask., where former Prime Minister John Diefenbaker spent his early childhood, will be moved to Regina and restored as part of the Wascana Centre as a tribute to the only Saskatehewan citizen to become Prime Minister of Canada. Isabel LeBourdais, author of The Trial of Steven Truscoth, Damed Woman of the Year by Canadian Press women editers. Dec. \&9, Under a federal-provincisl program for trans* forming the economic base of Cape Breton Island, the remaining coal mines in that area will be phased out gradually and new industry brought in. Dec. \$1, Report on graduate studies and research in Ontario recommended that Ontario's 14 provincially supported universities be amalgamated into one institution with many campuses. Retirement of Donald Gordon as President of Cansdian

National Railwaya after holding office for 17 years. Canada's Centennial Year ushered in with a ceremony on Parliament Hill in which Prime Minister Pearson ignited the Centennial Flame inside the main entrance to Parliament Hill.

## 154

January : Jan. 1, Mme Georges P. Vanier, wife of the Governor General, dedicated Canada.s Cantennial Train at Ottawa prior to its departure for Victoria where it began, on Jan. 9, an 83-stop tour of Canada. Jan. 4, Dr. Helen Hogg, University of Toronto, swarded the Rittenhouse Silver Medal by the Rittenhouse Astronomical Society for her study of variable stars; she was the first Canadian and the second woman to reseive the honour. Jan. b, Death of David Roger Mitchell, M.P. for Sudbury. Federal proclamation that Jan. 11, 1967, the birthday of Sir John A. Macdonald, be commenorated across Canada in observance of his place in history as one of the Fathers of Confederstion and the first Prime Minister of Canada. Jan, 9. Hon. Walter L. Gordon reappointed to the Federal Cabinet. Death in Winnipeg of Manitoba's Lieutenant-Governor, HoD. Errick F. Willis. Jan. 11, Canada's tallest and newest hotel, the 38-storey Chateau Champlain in Montreal, officially opened. Jan. 18, Nancy Greene, Rossland, B.C., won the Swiss international slif championship. Jan. 14, Large-scale strike by Roman Catholic elementary and secondsry school teachers closed hundreds of schools in Montreal and Trois-Rivieres; Mr. Juatice André Montpetit of Quebec Superior Court appointed by the Quebec Government Jan. 17 as medistor. Death of Hon. J. L. Ilsley, former Minister of National Revenue. Minister of Finance and Minister of Justice. Jan. 18 , Yeslowknife, N.W.T., officially named capital of the Northweat Territories. Jan. 2s, Special ministerial committee created to study the implications of foreign ownership and control of Canadian industry, headed by Hon. Walter L. Gordon. Jan. 24 The British Columbia Legislature opened its 28 th Legislature at New Weatminster in commemoration of the opening of the first session of the Legislative Council of the United Colony of British Columbis which merged the colonies of Vancouver Island and British Columbis in New Westminster one hundred years ago. Jan. 27 Col. Virgil Grissom, Lt.-Col. Edward White and Lt.-Cmdr. Roger Chaffee, crew of the U.S. Apollo spacecraft project. died in a fire on the launching pad. Jan. Wis. Valerie Jones, Toronto, and Dopald Knight, Dundss, Ont., won the Capadian senior singles figure-skating championships in Toronto. Explosions occurred at Yugoslav embassies and consulates in six North American cities, including Ottawa asd Toronto; buildings were damaged but there were ao injuries. Jan. 50 , Bank of Csnada interest tate reduced to 5 p.c. from 54 p.e. City of Montresal clerical workers went on strike, closing down municipal courta, the aocial welfare department and the City Hall.

## APPENDIX I

## CONSTITUTION AND GOVERNMENT

Certain information given in Chapter II on Constitution and Government (closed off Oct. 1, 1966) is up-dated in this Appendix.

## Page 85, Table 2

His Excellency General The Right Honourable Georges P. Vanier, D.S.O., M.C., C.D., died Mar. 5, 1967. The Hon. Roland Michener, P.C., Q.C., was appointed as the 20th Governor General of Canada on Apr. 4, 1967 and sworn in on Apr. 17, 1967.

## Page 87, Table 4

On Jan. 9, 1967, the Hon. Walter L. Gordon was appointed Member of the Administration, precedence following the Hon. Paul Theodore Hellyer.

On Apr. 4, 1967, the Hon. Lucien Cardin resigned as Minister of Justice and Attorney General; the Hon. Guy Favreau resigned as President of the Queen's Privy Council for Canada; the Hon. Walter Gordon was appointed President of the Queen's Privy Council for Canada; the Hon. John Turner was appointed Registrar General of Canada; Pierre Elliot Trudeau, Parliamentary Secretary to the Prime Minister, was appointed Minister of Justice and Attorney General; and J.-J. Jean Chrétien, Parliamentary Secretary to the Minister of Finance, was appointed Member of the Administration.

## Pages 88-89, Table 5

On Jan. 11, 1967, the Prime Minister announced that His Excellency the Governor General had approved his recommendation that the Premiers of the Provinces be appointed to be members of the Queen's Privy Council for Canada, to be sworn in at a later date.

The Rt. Hon. James Lorimer Ilsley died Jan. 14, 1967.
Mme Georges P. Vanier was appointed a member of the Queen's Privy Council for Canada on Apr. 11, 1967.

## Pages 9l-92, Table 8

The Hon. Douglas Everett was appointed Senator for Manitoba on Nov. 8, 1966. Senators appointed Apr. 6, 1967: the Hon. Maurice Lamontagne, P.C., Montreal. Que.; Mrs. R. A. Kinnear, Port Colborne, Ont.; Keith Laird, Q.C., Windsor, Ont.; and Andrew Thompson, Kendal, Ont.

The Hon. Adrian K. Hugessen resigned as Senator for Quebec on Jan. 1, 1967. The Hon. Stanley Stewart McKeen, Senator for British Columbia, died on Dec. 1, 1966; the Hon. William Rupert Davies, Senator for Ontario, died Mar. 11, 1967; and the Hon. Alexander Neil McLean, Senator for New Brunswick, died Mar. 12, 1967

Pages 95-100, Table 10
R. Mitchell, Member of the House of Commons for Sudbury, Ont., died Jan. 5, 1967.

Footnote ${ }^{1}$ (p. 96)-by-election for Hull electoral district had not yet been held at the date of going to press.

## Page 118, Government of the Yukon Territory

R. G. Cameron retired as Commissioner, dated May 31, 1966, and James Smith was appointed Commissioner on Oct. 14, 1966.

## Pages 118-119, Government of the Northwest Territories

B. G. Sivertz retired as Commissioner on Jan. 16, 1967; Deputy Commissioner Stuart M. Hodgson was appointed Commissioner and John H. Parker, Deputy Commissioner on Mar. 2, 1967.

An Act to amend the Northwest Territories Act (SC 1966-67, c. 22), which received Royal Assent on June 2, 1966, authorized the addition of three elected members to the Council of the Northwest Territories. The following were subsequently elected: Simonie, E7-551 for Eastern Arctic electoral district; Duncan Pryde for Central Arctic electoral district; and Robert Williamson for Keewatin electoral district.

On Jan. 18, 1967, Yellowknife became the capital of the Nortbwest Territories.

## APPENDIX II

## POPULATION

The statement was made on p. 182 that this Appendix would include as many of the population figures from the 1966 Census as were available at the time of going to press. However, it was found that the first 1966 Census data would not be ready for distribution for about two months following the cut-off date for inclusion of material in this volume. As stated in the Population Chapter, a list of publications of the 1966 Census is available, on request, from the Queen's Printer or the Dominion Bureau of Statistics.

Since the printing of the Population Chapter, population estimates by province as at June 1, 1966, have become available and elements of population growth from June 1, 1961 to June 1, 1966 are shown in the following table. Total population as of June 1, 1966 was estimated to be $19,919,000$, an increase of 9.2 p.c. during the five-year period; this compares with a 13.4-p.c. increase between 1956 and 1961 and one of 14.8 p.c. between 1951 and 1956. The slowing down of the rate in the latest five-year period is partly accounted for by the marked drop in the birth rate in Canada from 26.1 to 21.4 per thousand population, reflecting the decrease in the number of births from 475,700 to 418,595 .

The number of births over the whole 1961-66 period was about $2,250,000$ compared with $2,362,000$ in the previous census period, a decrease of 112,000 . In the same comparison deaths were $+5,000$ greater, resulting in a decline in natural increase of 157,000 . The falling-off in immigration in the later five-year period was even greater, being 539,000 compared with 760,000 in the previous period, and, because emigration was estimated to be about 30,000 greater in the 1961-66 period, the decrease in net migration was 251,000 . It should be noted, however, that immigration has increased each year since the low point of 1961 ; in 1966 it reached a total of 194,743 , more than two and a half times the 1961 figure.

Among the provinces, population growth over the 1961-66 period was especially marked in British Columbia where the increase of 233,000 , or 14.3 p.c., was largely accounted for by the heavy movement of people from other provinces; net interprovincial population gain recorded by that province since 1961 was estimated at just over 100,000 . The only other province showing a net gain in this period through interprovincial migration was Ontario, where it amounted to just over 50,000 . Immigration was also an important factor in Ontario's population growth, which amounted to 659,000 , or 10.6 p.c., since 1961 ; some 287,000 or a little over half of all immigrants to Canada between 1961 and 1966 settled in that province. Newfoundland also recorded an increase in population of just over 10 p.c. during $1961-66$. The growth rates of Alberta and Quebec at 9.9 p.c. sad 9.2 p.e., respectively, corresponded closely with the Canada rate but the Maritime Provinces, Manitoba and Saskatchewan all showed an average rate of increase of less than 1 p.c. per annum.

Elements of Population Growth, June 1, 1961 to June $\mathbf{1 , 1 9 6 6}$

| Province | Population Census June 1, 1961 | Births | Deaths | Natural Increase | Estimated Net Mizration | Population <br> Estimated <br> June 1, 1966 | Increase |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | '000 | '000 | '000 | '000 | '000 | ${ }^{\prime} 000$ | No. | p.e. |
| Nfd. | 458 | 76 | 15 | 60 | $-13$ | 505 | 48 | 10.3 |
| P.E.I. | 105 | 14 | 5 | 9 | $-5$ | 109 | $\stackrel{4}{4}$ | 3.8 |
| N.S. | 737 | 91 | 31 | 60 | $-37$ | 780 | 23 | ${ }^{3.1}$ |
| N.B. | 598 | 77 | 24 | 54 | -25 | ${ }^{627}$ | -289 | ${ }_{9}^{4.8}$ |
| Que. | 5,259 | 646 | 189 | 457 | +28 | 5.744 8,895 | 485 659 | 9.2 10.6 |
| Ont. | 6,236 | 753 | 285 | 488 | +171 | $\begin{array}{r}6,895 \\ \hline 958\end{array}$ | 659 86 | 3.9 |
| Man.. | 922 | 109 | ${ }_{37} 38$ | 70 78 | -34 -47 | ${ }_{9}^{958}$ | ${ }_{29} 8$ | 3.1 |
| Sask. | 1025 $\times 1.332$ | 1112 | 37 47 | 76 134 | -47 | 1,464 | 132 | 9.9 |
| A.C. | 1,629 | 181 | 77 | 104 | $\pm 128$ | 1,862 | 233 | 14.3 |
| Y.T. | 14 | , | 1 | 2 | -1 | ${ }_{2 B}^{15}$ | $\frac{1}{3}$ | 7.1 13.0 |
| N.W.T. | 23 | 6 | 1 | 5 | -2 | 26 |  |  |
| Canada. . | 18,238 | 2.250 | 731 | 1,518 | 152 | 19,915 | 1.681 | 9.2 |

[^397]
## INDEX

Nors.-This Index does not inclode references to Special Articles published in previous editions of the Year Book. These are listed at pp. 1236-1239.

| Page | Alberta admisgion to Confederation....... Page 88 |
| :---: | :---: |
| Aborigines-see "Indians" and "Eskimos", <br> Acadian forest region............................... 500 , 51 |  |
| Accidents, motor vebicle................256, 281, 815- |  |
| $\rightarrow$ on railways................................... 794 | produce, index numbers of . . . . . . . . . . . . . . 474 , 498 |
| Accounts, national. ........................... 10.68 -80 | services................................. 4878 |
| Aots, jederal, 1066-67......................... 1217-53 | - Aqriculture, Dept. of........................ 467 .8 |
|  |  |
| Adalt education.........345-6, 352, 353, 354, 364, 373 <br> - aff enders and convictions. <br> 414-24 |  |
| Advertising agencies............................ 907 | - mothers'................................... 3 . 322 |
| Aerodromes................................... 88. | yo |
| Aeronautical nsvigation, radio aids to . $\ldots . .850-1,878-9$ | - area......................................7. 34,441 |
| African Assiatance Plan, Special Commonweslth..................................... . | — births and birth rates................337. 243, 244, 250 <br> - capital and repair expenditures. $\qquad$ |
| Age of adult, offenders......................... 417 , 422 | - constraction industry.................718, 717, 719 |
| - of immigrants.............................. ${ }^{223}$ | - co-operative associations.................... 819 |
| - of parents ${ }_{\text {, }}$. . . . . . . . . . . . . . . . . . . . . . . . . . . . . 247-8 $^{\text {a }}$ | - deaths and death rates................237, 254, 280 |
| - of popalstion............................... ${ }^{\text {a }}$ 194-5 | - diseases, notifable........................... 306 |
| Aged, servicea for....................312, 315-6, 322-3 | - divorces................................... ${ }_{\text {751 }}$ |
| Agepcy corporations, Crown.............143, 156, 162 | - earnings, average in industry ................751, 76 |
| Agricultural agreements, federal-provincial.445-7, 1053 | - education-see "Education'. 043,647 651-5 662 |
| -colleges and schools....................... ${ }^{4618}{ }^{468}$ | - electric power statistics........643, 647, 651-5. 662 |
| - co-operatives, .......................... 018 , 920 | - employment, index numbers of..............750, 751 |
| - irrigation and land conservation............. ${ }^{\text {- land, areas of....... }}$ 445-7 |  |
|  | - farm income................................................................. 479,473 |
| production................473-8, 483-9\%', 505-7, 914 | —— statistics, |
| Products Co-operative Marketing Act....... 928 | - field crops |
| exports of............................... . 981 | - fisheries adminis |
| grading and protection of................ 452, 458 | - fishery produ |
| imports of............................... ${ }^{\text {a }} 984$ | - forest resources-see 'Forest' |
| marketing of...................... .908-16, 923-8 | - iorested area.........................441, $511_{1} 512$ |
| - and Rural Development Act...............445, 446-7 | - forestry program........................ $515,53,583$ |
| research and experimentation $385-6,390-1,410,449-51$ | - freight movement...............................921, 922 |
| - schools and collegrea........................ 468 | - debt....................................... . 10.6 . 1063 |
| Stabilization Board.................. 142, 144, 457-8 | insurance. . . . . . . . . . . . . . . . . . . . . . . . . . . . . ${ }_{\text {+ }}$. 1164 |
| statistics . . . . . . . . . . . . . . . . . . . . . . . . . . . 469-503 | revenue and expenditare.......... 1036-7, 1057-61 |
| international. . . . . . . . . . . . . . . . . . . . . . . . . . 50 . ${ }^{\text {05-7 }}$ | - bealth services.............. 281-4, 290-7, 307, 308 |
| - of the Census. . . . . . . . . . . . . . . . . . . . . . . . . 50. 503-5 | - hospitala................. 281-4, 298-9، 301-2, 304 |
| Agriculture. $\qquad$ 448-507 <br> - Dept. of, Acta administered by | - jrmmigrants-see "Population". <br> - irrisation and land conservation. |
| 151, $453,457-8,460-2,923-8$ | - judicial convictions-see "Criminal and |
| tional grants and shared- | judicial": ${ }^{\text {737-41 }}$ |
|  | labour legislation........................... ${ }^{\text {737-41 }} 13$ |
|  | lake9, principal <br> - libraries. |
| isrm loans................... . . $835-6,458-9$, 460-1 | Lieutenant-Governor.............................. ${ }^{\text {a }}$. 115 |
| income................................... 469-73 | -n livestock....................................... 481,916 |
| - Federal Government in relation to....445-7, 44-62 | manufactures. . . . . . . . . . . . . . . . . . . . . . . . . . . . 6889 . 694 |
| - field erops, production and values of......... 474-8 | - matriages |
| - persons employed in...........................742, 744 | - mineral productio |
| -provincial governments in relation to....... ${ }^{\text {a }}$ 463-8 |  |
| Air agreemente, international........................174, 843 | - mining, provincial aid |
| - Force, Royal Canadisn, equivalent ranks... 1171 | - motor vehicle and trafic regulations........ 800 |
| -operations and training.............. 1176-80 | - mountains and other beights. |
| rates of pay and sllowances........... 1168-71 | unicipaliti |
| - Lines, Canadian Pacife. ..................... 846 |  |
| - foreign................................... .848-9, 853 | — parks. |
| - independent.............................. . 846-8 | - pipelin |
| mail. . . . . . . . . . . . . . . . . . . . . . . . . . . .846, 852, 889 | - population |
| personnel.................................... 858.485 | - repregentation in the House of Commons |
| services, current. ............................ . . 845-52 |  |
| - financial statistics of................ . 846, 853, 854 |  |
| -trafic. ................................. 845-8, 852-3 |  |
| control. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 850-1 |  |
| - Transport Board.....................130. 787, 854 | -mploy |
| civil. ........................... . . . . . . . . 888-55 | insurance |
| Aircrast landing areas. . . . . . . . . . . . . . . . . . . 849-50 | - water power oi-see |
| -registered.................................. 8. |  |
| Airfelds, military . . . . . . . . . . . . . . . . . . . . . . . 850 | Alcobolie beverages, control and sale or...... ${ }^{\text {a }}$ |
| port activity . . . . . . . . . . . . . . . . . . . . . . . . . . 851-2 | , 1035 |


| Page | Page |
| :---: | :---: |
| Allowances for blind persons................. ${ }_{317}$ | Aviation, civil, ground facilities............... 849-50 |
|  |  |
| - family............................ $\mathbf{3 1 2 - 3}^{112}$ |  |
| - and indemnities to members of the Senate and House of Commons. | weather services...............75-6, 849, 877-8 |
| - mothers'.................................. ${ }^{\text {a }}$ 321-2 |  |
| -veterans.................................is in $_{313-1}$ |  |
| - youth..................................153, 313-4 | Balance of international payments............ 1089-94 |
| Aluminum, production of......................... 565 | Bank of Canada.......................144, 1118-21 |
| $\begin{array}{ll}\text { Ambassadors, Canadian, abroad................. } & 164-8 \\ \text { - foreign, in Canada........................... } & 168-9\end{array}$ | $\qquad$ Act and its amendments..................151, 1118-21 liabilities and assets. |
| American Federation of Labor........... 7776,782 , 783 | 三 notes......................................ii20. 11220 |
| Animal products, consumption of.............. 501-3 | $\qquad$ reserves $\qquad$ |
| Animals, farm, numbers and values of........ 481 | - deposits. $\ldots . . . . . . . . . . . . . . . . .1120, ~ 1124, ~ 1130-1 ~$ |
| — marketing of.....................499, 914-6 | - Industrial Development. ................148, 1120-1 |
| Annual holidays, regulation of..........738, 740, 765-6 | - Post Office Savings....................... 1133-4 |
| - Vacations Act................................. Annuities, Government. . $1161-3_{153}$ |  |
| Anti-discrimination laws....................739, 740-1 | Banks, chartered. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 1125-33 |
| Apiculture.................................... ${ }^{\text {a }}$ 494-5 | - assets and liabilities....................... 1130 |
| Appalachian Region........................... 23-4 $^{23-4}$ | branches of. . . . . . . . . . . . . . . . . . . . . . . . . 1128-9 |
| Appeal Board, Tax............................104, 140 | - cheque payments......................... 1133 |
| Appeals in criminal cases..................... 424 | - deposits..............................1124, 1130-1 |
| Apples, production and value of . . . . . . . . 490 | - financial statistics of..................... 1130-2 |
| Appointments, diplomatic, 1966-67..........i. 1241 | note circulation of........................ 1122 |
| - official, register of 1966-67............. 1240-6, 1261 | Barbados, tariff arrangements with........... 1002 |
| Apprenticeship training. . . . . . . . . . . . 347, 348, 741 | - trade with-see "Trade by count |
| Archives, Public........................ 138, 154, 1041 | Barley, acreage, production and value of.475, 476, 478 |
| Arctic, Climate of Canadian. . . . . . . . . . . . . . . 55-74 | - farm income from.......................... 471 |
| Area of Canada and provinces..............7, 34, 441 | - international statistics of................... 507 |
| - Development Program.................... 278 | - prices of. . . . . . . . . . . . . . . . . . . . . . . . 4745 , 499, 911 |
| - land, agricultural and forested.............. 440-2 | - receipts and shipments of................... 913 |
| - by tenure.................................. 34 | - stocks of................................. 479 |
| Areas and elevations of principal lakes......... 12-4 | - supply and disposition of.................. 912 |
| - and depths of Great Lakes.............. 12 | Beans, production and value of................ 477 |
| - and populations of countries of the world.... 209-14 | Beaver pelts, number and value of............ ${ }_{5}{ }^{626}$ |
| - of principal islands........................ 16.7 | Beef, consumption of............................501, 502 |
| Argentina, tariff arrangements with............ 1004 | -retail prices of............................... 945 |
| - trade with-see "Trade by country | Beekeeping industry.......................... $494-5$ |
| Armed Forces-see "Canadian Forces". | Beet sugar, shipments of....................... 495 |
| Army, Canadian, cadets..................... 1176 | Beets, sugar, production and value of.........478, 495 |
| - equivalent ranks......................... 1171 | Belgium and Luxembourg, tariff arrangements |
| -- operations and training ..........1174-6, 1178-80 | with................................. 1004 |
| — rates of pay and allowances.............. 1168-71 | --trade with-see "Trade by country". |
| Arsenals Limited, Canadian.................... 143, 145 | Bermuda, tariff arrangements with............ 1002 |
| Art and education............................. 365-73 | -trade with-see "Trade by countr |
| - schools, galleries and organizations.......... 365-8 | Beverages, alcoholic, control and sale of....... 930-2 |
| Asbestos production................539, 540, 552, 567 | - consumption of............................. 501 |
| Assets abroad, Canadian...................... 1100-1 | Bill of Rights Act, Canadian..............80, 152, 414 |
| - chartered bank............................. 1130 | Birds, protection of migratory . . . . . . . . . . . . 50,51 |
| - Federal Government........................ 1042 | Birthplaces of adult offenders................. ${ }_{20}^{417}$ |
| Assistance Fund, Veterans....................... 333 | - of immigrants.............................. 20, $_{2078}$ |
| - old age.................................... 315-6 $^{\text {a }}$ | - of population............................... . $^{197-8}$ |
| - Plan, Canada.............................. $314-5$ | Births and birth rates. .......................236-51, 276 |
| - unemployment.............................. 317-8 | - in hospitals........................................ 243 |
| Astronomy, research in. $\qquad$ 400-1 | - in urban centres.............................238-40, 244 |
| Atlantic Development Board............144, 445, 1111-4 | - illegitimate................................................ $244-5$ |
| Atomic Energy Agency, International.........172, 176 | - multiple.......................................................................442-3 |
| - of Canada Limited...................i43, 144, 391-6 | - stillbirths.................................. 245 , 249-51 |
| - research.................................. 391 .6, 410 | Blind persons, allowances for................... 316 |
| Auditor General's Office.......................129, 130 | - education for....................... 352,353 |
| $\underline{-}$ Act administered by.................... 151 | Board, Agricultural Stabilization.......142, 144, 457-8 |
| - expenditure re.......................... 1040 | - Air Transport...................... $14{ }^{130}{ }^{135}{ }^{787}$ 1111-4 |
| Australia, tariff arrangements with....;....... 10 | - Atlantic Development. ............144, 445, 14, 1040 |
| - trade with-see "Trade by country", 1004 | - Atomic Energy Control....... $13.1 .142,880,881-2,1040$ |
| Austria, tariff arrangements with............. 1004 | - of Broadcast Governors.......130, ${ }^{\text {- Canada Labour Relations.........2, }} 736$ |
| $\overline{\text { a trade with-see }}$ Automobile accidents...................256, 261, 815-6 | - Canada Labour Relations.......146, 469, 470, 924-5 |
| - insurance...................................... 1158 | - Defence Research..................136, 410, 1180-1 |
| -Saskatchewan government................ 1163-4 | Dominion Coal...................142, 147-8, 583-5 |
| Automobiles, laws and regulations re......... 800-4 | - Eastern Rockies Forest Conservation...17. $14.148,613$ |
| - new, apparent supply of................... 809 | isheries Prices Support......................132, 13, 611-3 |
| _-sales of . . . . . . . . . . . . . . . . . . . . . . . . . 904 | - of Grain Commissioners....................130, 1323-4 |
| - registration of.............................. 808 | - Municipal Development and Loan. .142, 149, 1114-5 |
| - revenue from............................. 80. 809-10 | - National Energy....................136, 788, 932-4 |
| Automotive program (Canada-United States). 702 | Film................. 136, 354, 374-5, 1041 |
| Aviation, civil, administration of.............. 883 -4 | 823-4, $137,4351-2$ |
|  |  |
| nances.............................. $846,853,854$ | - Permanent Joint, on Defence. |

Page
140
Board, Tariff
104, 140
104, 140

- Tax Appeal ..... 337
- Treasury. ..... 141
- War Veterans Allowance ..... 141, 330-1
Bolivia, tariff arrangements with ..... 1005
Bond market1143-5
Books about Canada ..... 1185-1201
Boreal forest region ..... 509
Boundaries of Canada
584-5, 936-7
584-5, 936-7
Bounties and subventions, coal.
Bounties and subventions, coal. ..... 1005
- trade with-see "Trade by country;
Bridges, construction expenditures ..... 715,717
Britain, tariff arrangements with. ..... 1002
- trade with $628,970-2,976,979,981-7$
admission to Confederation. ..... 88-91
British Columbia, admission to Confederation. ..... 82
468
- agricultural colleges ..... 1
- produce, index numbers of. ..... 474, 498 ..... 468
- Agric
- Agric
- allowances for blind persons ..... 316
- allowances for blind per ..... 316
317
3
- family. ..... 313
mothers' ..... 322
- area. ..... 7, 34,441
- births and birth rates. ..... 237, 243, 244, 250
- capital and repair expenditures
716, 717, 719
- construction industry ..... 719
co-operative associations
237, 254, 260
237, 254, 260
- deaths and death rates
- deaths and death rates ..... 306 ..... 271
- diseases, notifiable
- diseases, notifiable
- earnings, average in industry ..... 751,754
- education-see "Education'
- electric power statistics ..... 643, 648, 651-5, 663
- employment, index numbers of ..... 750, 751
- and payrolls
472, 473
- farm income. ..... 459, 461
- statistics ..... 503-5
- field crops ..... 476-8
- fisheries administration ..... 621
- fishery products-see "Fisheries
- forest resources-see "Forest"
- forested area441, 511, 512
- forestry program. ..... 515, 533-4
- freight movement ..... 921, 922
- government ..... 105-6, 116-7
- debt.
1036-7, 1057-61
- revenue and expenditure - health services ..... $281-4,290-7,307,308$
- hospitals. ..... $281-4,298-9,301-2,304$
- immigrants-see "Population- immigrants-see "Population"
- irrigation and land conservation. ..... 446
- judicial convictions-see "Criminal and
judicial".
- labour legislation ..... 737-41
- lakes, principal ..... 13-4
- libraries ..... $378,379,380$
- Lieutenant-Governor.
481, 916
481, 916
- manufactures ..... 689, 694-5
- marriages ..... 237, 268
- mineral production-see "Mineral" and"Minerals"
- mining, provincial aid to ..... 589
- laws of-see "Mining"
- motor vehicle and traffic regulations. ..... 800-4
- mountains and other heights. ..... 18
- municipalities. ..... 119-20, 122-3
- old age assistance. ..... 316
- parks ..... $34,38,39,46$
- population-see "Population"
- representation in the House of Commons.93, 99-100 - in the Senate. ..... 91, 92, 1261


## Page

British Columbia Research Council.
.404

- roads and highways. ..... $804,805,806$
- Royal Commissions ..... 125
- schools-see "Education" - unemployment assistance ..... 318
- insurance benefits ..... 771
- water power of-see "Water Power" - welfare services. ..... 320-4
- workmen's compensation ..... 741, శ72-3
British Honduras, tariff arrangements with. ..... 1002
- trade with-see "Trade by country". ..... $78-84,88,90,92-3,103$,
$105,119,412-3,449,607$
- preferential tariff ..... 1000-4
Broadcast Governors, Board of..130, 870, 881-2, 1040
Broadcasting Act, Canadian ..... 870, 882
- Agreement, North American Regional. ..... 869, 876
- Corporation, Canadian143, 145, 373-4, 870, 881-8, 1040
- radio and television. ..... 373-4, 881-8
Buckwheat, acreage, production and value of. . ..... 477
Budget, Federal Government. ..... 127
Building construction 713-4, 724-5
- government aid to house. ..... 335-6, 458-9,
- permits issued 720-3, 724, 725-8
- research ..... 717-9
Bulgaria, tariff arrangements with. ..... 1005
- trade with-see "Trade by country"
Bullion and coinage issued ..... 1124
Bureau of Statistics, Dominion ..... 132
publications. ..... 1203
Burma, tariff arrangements with. ..... 1005
- trade with-see "Trade by country" .....
812-3 .....
812-3 $352,353,35$ ..... 4, 363
Buses, passenger.
Business colleges
Buses, passenger.
Business colleges
- failures. ..... 937-40
Butter, domestic disappearance of. ..... 489, 501
- production of
- production of ..... 486 ..... 486
By-elections since 26th General Election. ..... 100, 1261 ..... 100, 1261
Cabinet, federal ..... 85-7, 100-1, 1261
Cables landed in Canada ..... 874
Calves, marketed ..... 915,916
- prices of ..... 499
- slaughtered at inspected plants .....
482 .....
482
Canada Assistance Plan70,178- and Colommonwealth relations, $1965-66$170-1, 178-80
- and International Labour Organization. ..... 172,173
- and North Atlantic Treaty Organization
176-7, 1168, 1172, 1174, 1176, 1183
- and UNESCO ..... $172,174,354,376-7$
- and the United Nations ..... $354,376-7$
- area of ..... 7, 34, 441
- chronological history of
- chronological history of ..... $78-181,1261$
- Council. ..... 145, 375-7, 406
- Emergency Measures Organization. ..... 83-4
- Fair Employment Practices Act. ..... 736
- Labour Relations Board. ..... 736
- (Standards) Code ..... 73̈6-7 ..... 1251
- Land Inventory ..... 447
- Manpower Centres ..... 734
- Pension Plan ..... 153, 309-12
-Shipping Act.............154, 155, 816, 817, 833, 876
- Student Loans Act. ..... 152,349
- Water Conservation Assistance Act. ..... 151, 446
Canada's external relations ..... 163-81
- international activities, $1965-66$ ..... 170-81
- investment position.
5-101
5-101
- mineral industry, 1867-1967 ..... 536-81
- Participation in the Changing Pattern of World Trade, 1953-66 ..... 953-66
- status in Commonwealth. ..... 163-4
Pagb
Canadian Broadcasting Act ..... 670. 882
- Corporation.....143, 1
373-4
-- educstionsi functions ..... 885-6
-citizenship ..... 139, 154. 228-33 ..... 154, 228-39- Act
- Costatistics. ..... ${ }^{230-3}$
- Coast Gusrd ..... 832-3
- Commercial Corporstion ..... 143, 145, 1183 ..... 278- Conference on Aging.
- Constitution, amendment of the ..... 81
$15-6$
- Corporation for the 1967 World Exbibition ..... 145-6
- Criminal Code.
- law and procedure152. 413-4
412-4
- excbange rates ..... 1141-3
- external aid programs ..... 178-81
- Farm Loan Act. ..... 461
1172-3
- Forces, command structure of ..... 1167
- Jiaison abrosd ..... 167
- operations and training of.. ..... 1173-80
—rates of pay and aliowapces. ..... 1168-71
- services and staf training collegea ..... 1178-80
- Government Participation, 1967 Exhibjtion. ..... 146
- Printing Bureau. ..... 131
- Travel Bureau
$778,782,783$
- Labour Congress ..... 271-5
- life tables

142. 149, 788

- Maritime Commission ..... 133, 1038, 1223-4
- Mint, Royal
- Mint, Royal
- National Railways-see "Railways"- Steambbips Limited143
- Overseas Telecommunicstion Corporstion ..... $143,146,873-4$
- Pacific Air Linea Limited ..... 846
- Railway 788, 795. 800
- Patents and Development Limited ..... 143, 146
- Penitentiary Service. ..... 131
- Pension Commission ..... 131, 32
- representation abroad, diplomatic ..... 164-8
- Press.
- Press. ..... 691-5 ..... 691-5
- Services Colleges. ..... 1178-9- Shield.21-3
- shipping registry ..... 817
- Wheat Board ..... 146, 469, 470, 824-8- Wildlife Service.© 0 -1
Cansls, Canadian systema. ..... 824-82
$\rightarrow$ expenditure and revenue re. ..... $831,835,837$
- traffie of.82432
- under Department of Trassport ..... 85.837
Cancer, deaths Irom ..... 256
- services for ..... 293
Capital expenditures, construction and bousing ..... 705-30
construction
equipment705-12
-- on waterways ..... 835
$\rightarrow$ investment in Canada. ..... 1091-9
- Plan, National ..... 48-9
- and repair expenditures ..... 708-12
- Revision Acts, CNR ..... 797
Cargoes, water-borne 818-22, $826-8,830-1,922$
awealth.......... $178-9$
Carribear Program, Commonwealth.
Carribear Program, Commonwealth. ..... $178-9$
Casualty insurance.
Casualty insurance.
$.915,916$
$.915,916$
Cattie, marketing of.
Cattie, marketing of.
481
481
- numbers ..... 498
- slaughtered at inspected plants. ..... 482
Cement production ..... 540, 553, 570-1
Census-gee "Popalation- agricultural statistics of503-5
Centennial Commisgion. ..... 143,147
Central Mortgage and Elousing Corporation$143,147,720-8$
Cereals, consumption of ..... 500
Ceylon, tariff artangements with. ..... 1002
- trade with--see "Trade by country"
Cbsrtered banks --see "Banks, chartered"
Charte and maps, list of. ..... $v$
Cheese, domestic disappearance of ..... 489, 501
$\rightarrow$ production of. ..... 486

| Pagz | Pa |
| :---: | :---: |
| Commercial banking system.................. 1125-35 | Construction, pipeline.. |
| - construction................................. 714 | under Farm Credit Act...................... 460 |
| - Corporation, Canadian...............143, 145, 1183 | - Farm Improvement Loans Act............ 458- |
| - failures and bankruptcies................... 937-40 | National Housing Act. ................... 72 |
| - fishing and marketing...................... 599-601 | Veterans' Land Act....................... 335- |
| - services, capital expenditures for........... ${ }^{146}{ }^{711}$ | - in urban centres, proposed................... 718 |
|  | - work performed, value of....................................... $712-16$ |
| - Centennial................................143, 14.148 | Consumer credit, retail............................ 904 . |
| Commonwealth War Graves................ 336 | - expenditure surveys......................... 947 |
| - International Joint. ......................135, 443-4ر | - price index. |
| Law..................................... 176 | Consumption |
| - National Battlefields........................143, 149 | - of food..................................... 500. |
| Capital. .........................46-9, 143, 149 | Continental shelf |
| - Northern Canada Power.........143, 150, 648, 664 | Control of alcoholic beverages. |
| - Public Service..........................138-9, 156 | - of civil aviation................................787, 85 |
| - Restrictive Trade Practices................. 929 | - of coal..................................... ${ }^{58}$ |
| Unemployment Insurance. . . . . . . . . . . 142, 150, 768 | - of communications........... 869-70, 875-7, 881 |
| Commissioners, Board of Grain............ 130, 923-4 | - of farm products marketing................. 923 |
| - Transport...................104, 130, 786-7, 837 | - of food snd drugs.......................... 285 |
| Commissions, power, provincial..........644-8, 655-64 | - of foreign exchange. ......................... 1141 |
| -Royal, federal and provincial.............. ${ }^{124-5}$ | - of grain tr |
| Commodities, movement and marketing of.. 896-922 | - of radio b |
| - principal, imported and exported............ $980-7$ | - of trade. |
| Commodity standards...................... 934 | - of transportation........................... 785-8 |
| Common stocks, index numbers of........... . ${ }^{\text {950-1 }}$ | - of wages.................................. 734-40 |
| Commons, House of. . . . . . . . . 85-7, 90, 92-101, 1261 | Convictions of adults.......................... 414-21 |
| - Members of........................95-100, 1261 | - appeals ag |
| Commonwealth Caribbean Program.......... 178-9 | - multiple. ................................. 418 |
| — tariff arrangements with. . . . . . . . . . . . . . 1002 | - summary. ............................... 423-4 |
| - Heads of Government meeting, 1966......... 170 | - of young adult offenders.................... 421-3 |
| - of Nations, Canada's status in............. 163-4 | Convicts, number of.......................... 429 |
| - relations, 1965-66, Canada and.........170-1, 178-80 | Co-operatives, Eskimo.......................... 209 |
| - Scholarship and Fellowship Plan........... 179-80 | - fishermen's |
| - tariff arrangements with .................. 1000-4 | - marketing and purchasing.................. 918-20 |
| - Technical Assistance Program............... 178 | - service...................................... 919 |
| trade with........... . . . . . . . . . . . . . $970-1,972-80$ | wholesale... . . . . . . . . . . . . . . . . . . . . . . . . . 919 |
| - War Graves Commission.................. 336 | Copper production...............539, 540, 551, 556-8 |
| Communication, Government control over agencies of................. 869-70, 875-7, 881-2 | - world production of ............................. ${ }_{935-6}^{594-5}$ |
| Communications........................... $861-95,1038$ | Cordilleran Region........................... ${ }^{\text {24-7 }}$ |
| - by cable.................................. ${ }^{\text {d73-4 }}$ | Corn, production and value of..................477, 478 |
| - by satellite. . . . . . . . . . . . . . . . . . . . . . . . . .861-2, 874 | Corporation income taxes |
| - meteorological. . . . . . . . . . . . . . . . . . . . . . . . 8 $^{877-8}$ |  |
| - radar.............................. $851,878,1176$ | ........ 1023-6, 1030 |
| -radio and television....................... ${ }^{\text {a }}$ - $81-8$ | - profits............................. 1048-9, 1079 80 |
| $\overline{\text { telephones and telegraphs.........862-9, 870-4, } 880}$ | Corporations, Crown...................142-50, 156, 162 |
| Companies, life insurance...................... 1145-54 |  |
| - small loans................................. 1140-1 | Departmental............................. 142, 156 |
| $\overline{\text { trust and loan............................ 1135-40 }}$ | - Proprietury . . . . . . . . . . . . . . . . . . . . .143-4, 156, 162 |
| Company of Young Canadians................ 147 | Correctional institutions, adult. . . . . . . . . . . . . 428-32 |
| Compensation, workmen's.............739, 741, 772-3 | Cost-of-living index-see "Consumer Price |
| Comptroiler of the Treasury . . . . . . . . . . . 128-9, 137-8 | Index". |
| Conditional grants and shared-cost programs. $1050-6$ | Costa Rica tariff arrangements with.......... 1005 |
| Confederation, provincial admissions to.....78-9, 82 | - trade with-see "Trade |
| Congress of Industrial Organizations (CIO) | Courts, federal. . . . . . . . . . . . . . . . . . . . . . . 103 -4 |
| 776, 782, 783 | - persons charged and convicted by .......... 421 |
| -Canadian Labour. . . . . . . . . . . . . . . .778, 782, 783 | -provincial and territorial................... 105 |
| Conservation of fisheries...................609, 610-1 | Cows, milk, numbers and values of............ 481 |
| - of forests.................................. 525-34 | - prices of................................... 499 |
|  | Credit, consumer.............................. ${ }^{\text {904-5 }}$ |
| - of wildlife...................... 49-51, 447, 629-33 | - unions.................................... 1134-5 |
| Constituencies, redistribution of parliamentary $92-4$ | Crime and delinquency..................... ${ }^{\text {4 }}$ 412-38 |
| Constitution, amendment of the Canadian.... 81 | Criminal and judicial statistics. $\qquad$ 414-29, 436-8 |
| - and government of Canada...............78-181, 1261 | ——adults convicted of indictable offences.... 414-21 |
| Construction, building.....................713-4, 724-5 | - appeals. |
| capital and repair expenditures on............ $\quad 705-12$ | nvi |
| - Central Mortgage and Housing Corporation aid to. | - correctional institutions and training schools....................................428-32 |
| - contracts awarded......................... 717 | - court proceedings......................... d $^{421}$ |
| - of dwelling units.........................336, 724-8 | - death sentences......................... 419, 423 |
| - of educational buildings............... 714,717 | disposition of cases...............418, 419-20, 428 |
| - employment in............716, 744, 747, 749, 751 |  |
|  | females convicted........416, 417, 419-20, 422-3 |
|  |  |
| - of highways and roads..............714, 717, 805-7 | parole system............................i37, 431-2 |
| of hospitals................................714, 717 | penitentiary service. . . . . . . . . . . . . . . . . . 429 429-30 |
| -hydro-electric. ............................i 644-8 | police forces.............................. ${ }^{\text {. }}$ 432-6 |
| industry, earnings in.....................716, 751-4 | oung adult offenders..................... $421-3$ |
| imited, Defence (1951)...............143, 147, 1182 |  |

Page458
Crop Insurance Act
474-8
Crops, field, production and values of
908-12, 923-5
908-12, 923-5

- grain, marketing of prices of $475,499,909,911$stocks of479, 912,917
- supply and disposition of ..... 908-12
- international statistics of ..... 505-7
Crown Assets Disposal Corporation ..... 143,147
- corporations ..... 142-50, 156, 162- forests.34, 512, 526-34
- functions of the ..... 84-5
- lands.1005
33
Cuba, tariff arrangements with
-trade with-see "Trade by country"
Cultural activities related to education ..... 354, 365-81
Currency, Canadian
$122-4$
$122-4$
Customs duties, revenue from ..... 1018, 1035, 1040
- system of. ..... 1000-1, 1029
- tariffs, development of ..... 1000-10
Cyprus, tariff arrangements with ..... 1003- trade with-see "Trade by country".1006
- trade with-see "Trade by country"$484-5,488-9, \quad 501$Dairy production
- products, consumption of ..... 471
Daylight saving time.
352, 353
Deaf and blind, education for ..... 236-41, 251-65, 376
Deaths and death rates.
255-8, 261, 263-4
- by age and sex ..... 251-4
- infant. ..... 236-41, 259-63, 276 ..... 236-41, 259-63, 276
- maternal ..... 236-7, 263-5, 276
- in urban centres. ..... 238-40, 254, 261
Debt, consolidated, of all governments ..... 1019
- federal, direct and indirect ..... 1019, 1039
- funded. ..... 1019, 1039
- guaranteed ..... $1019,1039,1043-4$
—— interest on ..... 1039, 1045
- summary of ..... i019, 1045
- municipal
1045
- national ..... 10421045
- provincial ..... 1019, 1062-3
pablic, administration of ..... 129
Deciduous forest region ..... 509, 510 ..... 509, 510
Defence, civil ..... 1038, 1183-4
- Construction (1951) Limited ..... 143, 147, 118
- contracts ..... 1182-3
- Council ..... 1168
- expenditure. ..... 1182-3
- liaison abroad ..... 167, 1168
- of Canada ..... 1167-84
- National, Dept. of-see under "National
- Production. Dept, of, Acts administered by ..... by $\quad 15$ expenditure $r e$ ..... 1041, 1182
- 
- 
- functions of functions of ..... 131-2, $1181-3$ ..... 1182
- productiont and constructiont sharing
- Research Boar ..... 1182-3 ..... 1182-3
- Services and staff training colleges ..... 1178-80
Delinquency and crime ..... 412-38
- juvenile ..... 425-8
Denmark, tariff arrangements with ..... 1006
- trade with-see Trade by country .....
291 .....
291
Dental health services, public
Dental health services, public
142, 156
142, 156
Departmental corporations, Crown
130-41
Departments, federal, functions of (see also
Departments, federal, functions of (see also individual Departments)
226
Deportations
$1120,1124,1130-1$
$1120,1124,1130-1$
Deposits, bank
Deposits, bank ..... 862-9
Diplomatic appointments, 1966-67. ..... 1241
- representation abroad ..... 164-8
- in Canada. ..... 168-9
Director of Soldier Settlement and DirectorPage
of the Veterans' Land Act............
Directory of source of ..... 1204-35
Disabled persons' allowances
- services for ..... 296-7, 319-20
Diseases, notifiable ..... 305-6
Disputes, industrial ..... 735-6, 783-4
- Investigation Act
- Investigation Act
153, 735-6
153, 735-6
Districts, electoral. ..... 5-100
Divorces. ..... 271
Docks, dry, earnings of federal ..... 837
Doctors, numbers and earnings of ..... 307-8
Dollar, price of U.S. in Canada ..... 1143
- value of Canadian ..... 1141-3
Dollars, holdings of U.S. in Canada ..... 1143
Domestic trade and prices ..... $896-952$
Dominican Republic, tariff arrangements, with. ..... 1006
- trade with-see "Trade by country" Dominion Bureau of Statistics ..... 132
- publications of ..... 1203
- Coal Board ..... 142, 147-8, 583-5
- Council of Health.
279
279
- Observatories ..... 399-401, 582-3
Dominion-provincial relations-see "Federal- provincial"
Drainage basins ..... 9-10
Drugs, control of ..... 285-6
Duties, excise. ..... 931, 1028-9, 1040, 1050
- succession ..... 1033, 1040, 1049
Dwelling units constructed. ..... 336, 724-8
loans for. ..... $335,720-8$
- statistics of the 1961 Census ..... 728-9 ..... 728-9
Earnings, average weekly and hourly in in-750-8
dustry
- of employees in Federal Government ..... 156-62
- in manufactures ..... 679-85, 688-98, 751-9
Eastern Rockies Forest Conservation Board.
1069-75
Economic activity, 1965-66 ..... 1068-1117
- aggregates, trends in.
181
- Co-operation and Development, Organiza-
- Co-operation and Development, Organiza- tion for (OECD)
$142,148,1101-11$
- Council of Canada ..... 19-30
Ecuador, tariff arrangements with ..... 1006
- trade with-see "Trade by country"
337-81
Education ..... 339-50, 355
- adult t. .345-6, 352, 353, 354, 364, ..... 373
- agricultural colleges and schools ..... 365-8
- art schools, galleries and organizations ..... 352, 353
- business colleges ..... 352, 353, 354, 363
- Canada Council
$373-4$
- CBC activities re
354
- correspondence courses ..... 337-9
- elementary and secondary ..... 341-3, 350-8
- enrolment ..... $351-3,355-6,359$
- Eskimo208-9, 354
- external aid in ..... 350
1038
- federal roles
- federal roles 347-50, 354, 361-2, 367-78, 1038 347-50, 354, 361-2, 367-78, 1038
- financing of. $346,348-9,354,357-8,361-2$,
$376,405-6,1038,1059$
- formal ..... 337-64
- grade distribution ..... 356
- grants to ..... $349,357-8,361-2,376$
$204-5,352,353,354$54, 377-81
- Indian............ ..... 369-73
- NFB activities re ..... $.354,374-5$
- non-Canadian students

Page


## Page

Employment in bus companies. ..... 813

- in civil aviation ..... 853, 855
- in construction industrie ..... 75
- in electrical utilities
800
800
- in express companies. ..... 156-62
- in fisheries
60
60
- in fur industry ..... 629
- in hospitals. ..... 301
- in manufactures. 679-85, 688-700, 744,
-by industry group. ..... 747, 748-9, 751
-by province ..... 8-95, 700
- in mineral industries
162-3
162-3
- in service industries ..... 747, 749, 751
- in telegraphs and telephones. ..... 872, 873
- in trade ..... 747, 749, 751
- injuries, fatal ..... 773
- Practices Act, Canada Fair. ..... 736
- winter works programs.
743,744
743,744
- of women.
796, 800
796, 800
- on railways
- on railways ..... 815
Energy, Mines and Resour
151
——functions of ..... 132, 410, 581-3
Engineering construction ..... 714-5, 717
- research, NRC ..... 88-90
Eskimos, co-operatives of ..... 209
- education of ..... 208-9, 354
- health and welfare services for ..... 208, 286
- population ..... 208
Estate Tax Act
937-8
Estates, bankrupt, administration of
1140
Estimates and appropriations, Federal Govern-125-7
ment
- of population, intercensal ..... 202
- of the world by continents
1006
Ethiopia, trade arrangements with
196-7
- trade with-see "Trade by country"
Ethnic groups of population
1141-3
Exchange, foreign
103-4
103-4
Exchequer Court of Canada
Exchequer Court of Canada ..... 1040 ,Executive Branch of Federal Government . 84-9, 1261
145-6, 702 ..... 647-9
Expenditure, con ..... 1069, 1076-7
- personal ..... 1078
Expenditures, capital ..... 705-12
- combined government ..... 1017, 1079
- federal $127-8,324-8,354,361-2,409-11$,1017, 1036-8, $1040-1$
- municipal.
.324-6, 1017, 1064, 1066
.324-6, 1017, 1064, 1066
- provincial $324-6,354,358,1017,1057$ ..... 1059-61
- on waterways.
450
Experimental farms, federal. ..... 450
Expo 67-see "Exhibition, 1967 World".
Expo 67-see "Exhibition, 1967 World". ..... 997
- Credita In
970
970
- new gold production available for.
970
968
970
968
Exports by commodities.
Exports by commodities. ..... 981-3 ..... 981-3
- by geographic region. ..... 972-5
- by leading countries. ..... 988-9, 992
- of coal ..... 580
- of electric energy ..... 652, 65 ..... 983628
- of newsprint ..... 521, 982
- of livestock ..... 981
- of wood products ..... 514, 521, 982
- of wool ..... 494
- to Commonwealth countries
- to Commonwealth countries ..... $72-5$
970
- principal Canadian ..... 981-3

| Page | Page |
| :---: | :---: |
| Exports, total domestic...................... ${ }^{\text {a }}{ }^{969}$ |  |
| Express companies......................... 799-800 | Field crops, cash receipts from................470, 471 |
| $\begin{array}{lr}\text { Ex-service personnel, welfare services ior. } \\ \text { External Affairs Dept., Acts administered by. } & 151\end{array}$ |  |
| Ext- expenditure re............................... 1041 | Film Board, National. . ..........136, 354, 374-5, 1041 <br> educational functions of |
| 乙- functions of. . . . . . . . . . . . . 132-3, 163-81, 350 | Films, motion picture, production of............ ${ }^{\text {a }}$. ${ }^{\text {a }}$ |
| - aid programs.............................. 178-81 | Finance company operations.................... ${ }^{\text {a }} 904$ |
| - relations, Canada's.............;.......... 163-81 | - Dept. of. Acts administered by.........151-2, 458-9 |
| - trade-see under Foreign trade. |  |
|  | - federal....................125-9, 1015-29, 1035-50 |
| Factory legislation............................ 734-41 | municipal......... 10.15 1015-9, 1034, 1037, 1064-7 |
| Failures, commercial and industrial........... 937-40 | Finances, hospital............................ ${ }^{\text {presen }}$ 302-4 |
| Fair Employment Practices Act. . . . . . . . . . . . 736 | - of railways-see "Railways", ${ }^{\text {Re............ }}$ 302-4 |
| - Wages Policy ........................... 734-5 | - of schools-see "Educat |
| Families and households.................... 200-2 | Financial administration of the Government of |
| Family allowances............................ 312 313 | Canada............................. 12.15 |
| Farm Assistance Act, Prairie. . . . . . . . . . . . . 151, 462 | Finland, tariff arrangements with............... 1006 |
|  | - trade with-see "Trade by count |
| Corporation......................143, 148, 460-1 | Fire insurance-see "Insurance". |
| electrification............................654, 662 | losses..................................... 1157-8 |
|  |  |
|  | Fiscal protection from .....................523, $526-34$ |
| labour, wages of................................. ${ }^{\text {a }}$. 766-7 $^{\text {a }}$ | Fiscal years, federal and provincial.............. vii |
| livestock, numbers and values of. . . . . . . . . . 479-81 | - imports and exports.................600-1, 981,984 |
| Loan Act, Canadian......................... 461 | - products industry ........................... 604-7 |
| loans........................335-6, 458-9, 460-1 | quantities landed and values of............. 599-604 |
| Machinery Syndicates Credit Act.......... 461 | Fisheries and furs............................. 597-633 |
| - operators, income of....................... 472-3 | - conservation. . . . . . . . . . . . . . . . . . . . . . . . . .609, 610-1 |
| - population................................ 187 | - Dept. of, Acts administered by............. 152 |
| - prices................................... ${ }^{\text {498 }}$ 498-9 | - conditional grants and shared-cost pro- |
|  |  |
| - products, control of marketing of.......... $923-8$ | expenditure re........................... 410,1041 |
| Farmers' Creditors Arrangement Act. . . . . . . . 937 | --functions of. ......133, 410, 607-13, 614, 615, 621 |
| supplementary payments to...............470, 471 | - Development Act. . . . . . . . . . . . . . . . . . . . . 608 |
| Farming, fur.........................471, 622-4, 626-7 | - federal-provincial relations re...............608, 1054 |
| Farms, Census statistics of................... $503-5$ | - governments and the....................... 607-21 |
| Fatal accidents, motor vehicle.........256, 261, 815-6 | - inland.................................... 602,604 |
|  | - international agreements re...............598, 610-1 |
| Fats and oils, consumption of.................. 501 | - persons employed in........................ 604 |
| Federal Assistance in Livestock Improvement. 453-7 | - Prices Support Board..................142, 148, 613 |
| - Cabinet..........................85-7, 100-1, 1261 | - primary production of....................... 59, 59-604 |
| Crown corporations................. 142-50, 156, 162 | - provincial research.......................... 616 6-21 |
| - Departments, Boards, Commissions, etc... 130-41 | Research Board.........................133, 611-3 |
| Acts administered by ................... 151-5 | - sea......................................... 5 597-604 |
| elections......................... . 89, 95-100, 102 | - statistics of............................... 601-7 |
| - finance.....................125-9, 1015-29, 1035-50 | Fishermen's co-operatives...................... 919 |
| forest experiment stations................34, 322 | Fishing and marketing, 1965, commercial...... 599-601 |
| forests. . . . . . . . . . . . . . . . . . . . . . 34, 512, 522-5 | Fitness and amateur sport program.......... ${ }^{318-9}$ |
| - franchise.................................. 101-2 | Flaxseed, a creage, production and value of, 475, 477, 478 |
| - Government-see "Government" | - farm income from......................... ${ }^{475}{ }^{471}$ |
| judiciary, the . . . . . . . . . . . . . . . . . . . . . . . 103 -4 | - prices of. . . . . . . . . . . . . . . . . . . . . . . . . . . 475 , 499 |
| labour legislation.........................153, 731-7 | - receipts and shipments of................... 913 |
| - lands. ..............33-41, 46-9, 512, 515, 590-1 | - stocks of................................... 479 |
| - legislation, 1966-67......................... 1247-53 | - supply and disposition of................... ${ }_{912}$ |
| - Legislature, the........................90-102. 1261 | Flora of Canada......................... ${ }^{33}$ |
| - Parliament.............................84-102, 1261 | Flour, wheat, production of.................... 914 |
| - sessions of................................ ${ }_{0} 89$ | Fexports of.............................. 981 |
| research................... 382-401, 405-6, 409-11 | Flying schools and clubs...................... ${ }_{\text {172 }} 8_{173}$ |
| - Royal Commissions. ...................... 124 | Food and Agriculture Organization............172, 173 |
| Federal-provincial agricultural agreements. .445-7, 1053 <br> - conditional grants and shared-cost pro- | - and beverage industries, activity of <br> 672, 681, 689-95 |
| Lrams................................................... 608,1054 |  |
| - forestry agreements..................... 525,1054 | - exports of................................. 981 |
| - hospital insurance...............281-4, 1035, 1055 | - family expenditure on...................... 947-9 |
| - housing activities.................722, 728, 1056 | - imports of................................. 945 $^{984}$ |
| resource development programs. . . . . . 445-7, 1055 | - prices, index numbers of.................... ${ }_{\text {1095-9 }}^{945}$ |
| - road assistance programs..... $\quad .$. |  |
| - taxation agreements..........1020, 1036-7, 1050-6 | - countries, tariff arrangements with....1001, 10045-4 |
| Federation of Latarar, American.............776, 782, 783 | - currencies, Canadian life insurance in..........................141-3 |
| Feeder grain assistance.......................... ${ }^{\text {F }}$. ${ }^{\text {F }}$, ${ }_{462}$ |  |
| Female Employees Equal Pay Act............ 736 | - shipping service............................ ${ }^{\text {P50 }}$ 817-22 |
|  | - trade......................................953-1014 ${ }_{971-80}$ |
| - convictions of............416, 417, $419.20,{ }^{\text {- }}$, ${ }^{422-3}$ | by country.....................................993-1010 |
| - deaths of in labour force................................. 743,744 | cern |
|  |  |
| - life expectancy of............................ ${ }^{\text {a }}$ 272-5 |  |


| Pagm | Page |
| :---: | :---: |
| Forest administration, research and conserva- $522-35$ |  |
| - and allied industries....................... 516 . 22 | Gatineau Park................................ 49 |
| - depletion................................ $514{ }^{\text {51/ }}$ | General Agreement on Tariffs and Trade (GATT) |
|  | (GATT) Assembly, United Nations.............................1001-10 171 |
| - - statistics.................................. ${ }^{\text {a }}$, 5146 | Geographical Knowledge of Canada, Growth of 1-6 |
| - inventories..................441, 447, 511, 523 , 525 | Geography, physical.......................... 7-19 |
| - land tenure................................ 34, 512 | Geological Survey of Canada. .............32, 33, 582 |
| - products, exports of. .................514, 521, ${ }_{471}^{982}$ |  |
| -regions....................................... $508-10$ | Germany, Federal Republic of, tariff arrange- |
| -research.........................410, 523-5, 526-35 | ments with...................; ${ }^{\text {a }} 1006$ |
|  |  |
| - resources................................. 508-10, $^{\text {- }}$. ${ }^{\text {a }}$, 512-3 |  |
| utilization.................................. 514 | Gold bullion, monetary use of.................. 1124 |
| Forestry........ . . . . . . . . . . . . . . . . . . . . . . . 508-35 | - Mining Assistance Act, Emergency ........ 585 |
| - agreements, federal-provincial. ............ 525, 1054 | - official holdings of........................... 1143 |
| - capital and repair expenditures............. 708 | - production of.................539, 540, 551, 560-2 |
| - employment, wages and salaries.......747, 748, 751 | - new, available for export. ............... 970 |
| - federal program,.......................515, 522-5 | - treatment of, in trade statistics............. 969-70 |
| - industry, lumber....................................................... $519-21$ | - world production of.............................. 8941261 |
| - veneer and plywood....................... 518-9 | - controls-see "Control". |
| - provincial programs....................... 526-34 | - Federal, administrative functions of. . . . . 125 -55 |
| - reforestation.......................... $525-34$ | - aids to and control of trade $\ldots$. ${ }^{\text {a }}$. 923-37, $993-1010$ |
| - and Rural Development, Dept. of, Acts administered by ................152, 445, 446-7 | - to housing. .....335-6, 458-9, 720-3, 724, 725-8 |
| expenditure re......................... 410 | to mineral industry ...................... 581-5 |
| functions of . . . . . . . . . . 133-4, 410, 445, 446-7 | to navigation. . . . . . . . . . . . . $833,850-1,878-9$ |
| - woods operations........................iv, 516-7 | to railways......................... 790 |
| Forests, Crown . . . . . . . . . . . . . . . . . . . 34, 512, 526-34 | annuities................................ $1161-3$ |
| Fox pelts, number and value of...........624, 626, 627 | Cabinet........................ 85-7, 100-1, 1261 |
| France, tariff arrangements with............... 1006 - trade with-see "Trade by country" | - debt of. .......................... 1019, 1039, 1043-5 <br> - Departments, Boards, etc. (see also under |
| Franchise, federal............................ 101-2 | individual Departments, etc.)......... 130-50 |
| -provincial.................................. 106 | economic planning agencies............... 1101-15 |
| Franklin District, area of..................................................... $\quad 82$ | education, interest in $347-50,354,361-2,367-78,1038$ |
| Fraternal societies, insurance business of...11466, 1151-3 | ployees and earnings in agency and |
|  | proprietary corporations, etc.............156, 162 employment.................................. 156-62 |
| - movements, interprovincial................ $920-2$ | Executive, the .................... $84-9,1261$ |
| -traffic, water........................817-22, 824-32 | expenditure 127-8, $324-8,354,361-2,409-11,1017$, |
| Freshwater area of Canada.................... 7 | $1036-8,1040-1$ |
| - fish, production and value of. . . . . . . . . . . . 604 | franchise................................ 101-2 |
| Fruit, consumption of.......................... . 500 | health activities......277-90, 324-8, 334-5, 1038 |
| - farm income from........................... 471 | Hospital Insurance and Diagnostic |
| - imports and exports of.......................981, 984 | Services Act................281-4, 1035, 1055 |
| - production................................ 4 $^{489-91}$ | hospitals.............286, 298-9, 300, 328, 334 |
| Fuel, imports and exports of.......... 579-80, 982, 984 | information services..................... 1201-2 |
| - mining, regulations re.............583-5, 590-1, 592 | insurance................................ $1161-3$ |
| Fuels, production of...........538-40, 543, 553, 573-81 | - judiciary, the............................ ${ }^{\text {a }}$ 103-4 |
| - Bales of motive............................. 810-1 | -- Legislature, the. . . . . . . . . . . . . . . . . . . .90-102, 1261 |
| - world production of. . . . . . . . . . . . . . . . . . . 59.5 | - National Health Grant Program. . . . 280-1, 296-7 |
| Fuelwood, production of....................... 517 | - public finance. . . . . . . . . . 125-9, 1015-29, 1035-50 |
| Funded debt of Canada. ....................1019, 1039 | radio communication services........... 875-9 |
| Fur bearing animal pelts produced.............. 624-7 | in relation to agriculture.............445-7, 449-62 |
| - conservation...................49-51, 447, 620-33 | - to fisheries.............................. 607-13 |
| - dressing industry............................ 629 | to forestry............................. $515,522-5$ |
| -farming..........................471, 622-4, 626-7 | to labour.............................. ${ }^{\text {a }}$ 731-7 |
| - goods industry ............................. 629 | to mineral industry . . . . . . . . . . . . . 581-5, 590-1 |
| - industry................................... 622-4 | - revenue 127-8, 890, 931, 1016, 1035, 1040, 1045-50 |
| - marketing. ..............................624, 627-8 | --surveying and mapping.................. 32-3 |
| - processing industry ......................... 628-9 | - taxation, system of...................1018, 1020-9 |
| - production statistics........................ 624-7 | telegraph and telephone service...... 873-4, 877-8 |
| - resource management..................49-51, 629-33 | - welfare programs.............309-14, 332-3, 1038 |
| - trapping................................622, 626 | - municipal, organization of (see also under |
| Furniture and fixture industries, activity of 682, 689-95 | "Municipal").......................... 119-23 |
| Furs and fisheries........................... 597-633 | - printing Bureau, Canadian.................... 131 |
| - imports and exports of..............627-8, 981,984 |  |
| pors and exports oo.................627-8, 981, 984 | - of the Territories.....................i05, i17-9, 1261 |
|  | Governments, combined revenue of............ 1016 |
|  | expenditure of............................. 1017 |
| Gallery of Canada, National.....142, 149, 367-8, 1041 | -_debt of................................... 1019 |
| Gaol sentences...............................419, 423 | - provincial, organization of (see also under |
| -population. .............................. 429 | "Provincial"). ........................... 105-17 |
| Gas meter registrations....................... 934 | Governors General of Canada, ............. 84-5, 1261 |
| - natural, production of................540, 553, 575 | Grain, acreages, yields and values............. 474-8 |
| - and oil pipelines........................... 855-60 | - Commissioners, Board of.................130, 923-4 |







| Page | Page |
| :---: | :---: |
| M | Mountains and other heights............... 17-9 |
| - hospitals, ........................297, 299-304 | Movement of freight, interprovincial........... 9202 |
| Merchandising and service establishments..... 896-907 | Multiple births. ................................ 244.5 |
|  |  |
| - wholesale...............................$^{902}$ | - Development and Loan Board.......i14. 14.11019 149. 1114-5 |
|  | - expenditure . .............324-6, 1017, 1064, 1066 |
| Metal industries, activity of $\ldots \ldots . . . . . . .682,68$ Metals and metallics-see "Minerals" | government, organization of................ 119-23 |
| Meteorological communications, federal...... 877-8 |  |
| - observing stations. ................75-6, 849, 877-8 | public finance............1015-9.1.1034, 1037, 1064-7 |
| Meters, electricity and gas.................. 934 | - revenue...................1016, 1037, 1061, 1064-5 |
| Metropolitan areas, census population of.......186, 188 | - tax levies................................ 1034 |
| employment index numbers.............. 750 | Municipalities, number of. .................... 123 |
| federal employment in.................... 158-9 | - proposed construction in selected.............. 718 |
| manufactures by ........................ $697-8$ | Museum, National, of Canada.................. 369-72 |
| Mexico, tariff arrangements with............... 1008 | Museums........................................ 369-73 |
| trade with-see "Tiade by | Muskrat pelts, number and value of............ 626 |
| crowave facilities, commer | Mutton and lamb, consumpt |
| Migratory bird legislation...................... $50-1$ | Mutual aid programs......................... 177 |
| Military airfields..............., |  |
| Milk, consumption of . . . . . . . . . . . . . 484-5, 488-9 | National accounts........................... 1068 -1080 |
| marketing control of. ................... 926-7 | Arts Centre Corporation. . . . . . . . . . . . . . . . 149 |
| production of concentrated products........ 487 | - Battlefields Commission.....................143, 149 |
| farm values of............................ 485 | - Capital Commission. . . . . . . . . . . . . . 46-9, 143, 149 |
| 484 | Plan. . . . . . . . . . . . . . . . . . . . . . . . . . . . ${ }^{\text {a }}$ 48-9 |
| Mineral industry, 1867-1967, Canada's......... 536-81 |  |
| government aid to..................... 581-9 | defence. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 1167-84 |
| industrial statistics of.................... 592-3 | Act...................................... 104, 153 |
|  | Armed |
| duction, provincial distribution of ........ 542-81 |  |
|  |  |
| Minerals, economic. ............................. 19-30 | ———expenditure re....................410, 1040,1182 |
| - fuel production..........538-40, 543, 553, 573-81 -_ organization of...................... 1167-8 |  |
| imports and exports of............. $982,984,985$ | procurement and construction contracts. 1182 |
| - industrial...............538-50, 552-3, 566-73 - schools, overseas...............352, 353, 356 |  |
|  | - services colleges and staff training colleges. 1178-80 <br> - Employment Service-see "Canada |
|  |  |
| structural materials. ......538, 540, 543, 553, 570-3 |  |
| Mines and minerals..................... 536-95 - expenditure |  |
| Minimum wage regulations...............737-8, 739-10 | Film Board. . . . . . . . . . . . . . . .136, 354, 374-5, 1041 |
| Mining, current production.................. 538-53 - educatio |  |
|  | - Gallery of Canada . . . . . . . . . . 142, 149, 367-8, 1041 |
| - government aid to .................... 581-9 - Harbours Board.........143, 149, 823-4, 835, 837 |  |
| - wages and salaries, average................ 751-4 | - Health Grant Program................280-1, 296-7 |
| - legislation................................. 590-2 |  |
| - stocks, index numbers of prices of.......... 950 |  |
| Ministers, Cabinet.................85-7, 100-1, 1261 -_ consultative and technical services of... $289-90$ |  |
|  |  |
|  |  |
|  | - Housing Act................................147, 720 ${ }^{\text {200 }}$ |
| Mink pelts, number and value of.......622-3, 626. 627 - income................................... 1069, 1075 |  |
| Mint, Royal Canadian...............133, 1038, 1123-4 | - labour organizations....................... 773 733 |
|  |  |
|  |  |
|  |  |
| Money supply................................. 1123 -4 | parks and sites........................... 34, 35-41 |
| Montane forest region......................... . . 509 -10 | product, gross $: 1 . . . . . . . . . . . . . .706, ~ 713, ~ 1069, ~ 1075 ~$ |
| Mortality, by causes................255-8, 261, 263-4 - railways-see "Railways' |  |
| - general....................236-41, 251-65, 276 |  |
| - maternal.....................236-7, 263-5, 276 -_ conditional grants and shared-cost pro- 1055 |  |
|  |  |
|  |  |
|  |  |
|  |  |
| Motive fuels, sales of............................ 810-1 $\quad$ functions of..................137, 1045-6, 1049-50 |  |
| M-taxation of........................... ${ }_{811}$ |  |
|  |  |
|  |  |
|  |  |
|  |  |
| __regulations......................... $800-4$ Natural gas, processing and marketing of...... ${ }^{\text {a }}$, 577 |  |
|  |  |
|  |  |
|  |  |

Page
Navigation, aeronautical, radio aids to....850-1, 878-9- facilities, financial statistics of...........831, 834-8833, 850-1, 878-9

- Government aids to.
878
-shipping facilities and traffic. ..... 816-34
Navy, Royal Canadian, operations and training 1173-4, ..... 1178-80
rates of pay and allowances. ..... 1168-71
Netherlands, tariff arrangements with the ..... 1008- trade with-see "Trade by country"82 ..... 441
- agricultural land
- agricultural land
- produce, index numbers of ..... 474, 498
- schools. ..... 468
- seryices ..... 463
- Agriculture, Dept. of. ..... 463
- allowances for blind persons.
- for disabled persons ..... 316
-family. ..... 317
- mothers ..... 322
youth ..... 7. 34,441
- births and birth rates. ..... 236, 243, 244,
- capital and repair expenditures. ..... 712
716 , - construction industry ..... 716, ..... 719
- co-operative associations
236, 254, 259
- deaths and death rates. ..... 259
306
- diseases, notifiable.
271
- earnings, average in industry ..... 751, 754
- education-see "Education
$642,644-5,651-5,657$- electric power statistics
- employment, index numbers of ..... 750,751
- and payrolls.
473, 473
- farm income.
459, 461
459, 461
- loans approved.
- loans approved. ..... 503-5
- field crops ..... 476-8
- fisheries administration. ..... 615-6
- fishery products-see "Fisheries
- forest resources-see "Forest"
- forested area441.511. 512
- forestry program. ..... 515, 527-8
- freight movement ..... 921, 922
- government. ..... 105-6, 109-10
debt. ..... 1062, 1063
- health services. ..... $1036-7,1057-61$
- hospitals. ..... $281-4,290-7,307,308$
$4,298-9,301-2,303-4$
- immigrants to-see "Population"
- judicial convictions-see "Criminal andjudicial"
- labour legislation ..... 737-41
- lakes, principal ..... 12
- libraries. ..... 378, 379, 380
- Lieutenant-Governor ..... 109
- livestock ..... 481
- manufactures. ..... 688, 691
- marriages, ..... 236, 268
- mineral production-see "Mineral" and
'Minerals'
- mining, provincial aid to ..... 586
- motor vehicl Mining ..... 800-3
- motor vehicle and traffic regulations
17
17
- municipalities. 119-20 ..... 123
- old age assistance ..... 316
- old age security
- old age security
312
312
part:s ..... $34,37,39,4$
- population-see "Population"
- representation in the House of Commons ..... 93, 95
- in the Senate ..... 91-2, 1261402-3
- roads and highways ..... 804, 805, 806
- Royal Commissions125
- schonls-see "Education"
- timber, estimated stand of ..... 512
- unemployment assistance.
318
318
- insurance benefits
771
771
- water power ol
320-4
320-4
- workmen's compensation. ..... 772-3

Page
Newfoundland, admission to Confederation ..... 82

- Agricultural Division ..... 463
- land ..... 441 ..... 316
- allowances for blind persons.
- allowances for blind persons.
- family ..... 313
- mothers' ..... 322
- youth ..... 314
- area ..... 7, 34, 441
- births and birth rates. ..... 250
- capital and repair expenditures ..... 712
- co-operative associations ..... 919
- deaths and death rates. ..... 259
- diseases, notifiable ..... 306
- divorces ..... 751, 754
- education-see "Education
- electric power statistics ..... $640,644,651-5,656$
- employment, index numbers of ..... 750. 751
and payrolls
459, 461
- farm loans approved ..... 503-5
- fisheries administration. ..... 613-4
- fishery products-see "Fisheries
- forest resources-see "Forest"
- forested area ..... 441, 511, 512
- forestry program. ..... 515,526
- freight movement. ..... 921, 922
- government
1062,1063
1062,1063
- revenue and expenditure ..... 1026-7, 1057-61
- health services ..... 281-4, 290-7, 307, 308
- hospitals.Criminal andjudicial"
- labour legislation ..... 737-41
- lakes, principal. ..... 12
- libraries ..... 106
- Lieutenant-Governor
- Lieutenant-Governor ..... 688, 689
- marriages ..... 236, 268
- mineral production-see "Mineral" and"Minerals"
- mining, provincial aid to ..... 586
- motor vehicle and traffic regulations. ..... 800-3
- mountains and other heights ..... 17
- municipalities. ..... 119-20, 123
- old age assistance ..... 316
security
security ..... 312
41 ..... 34, 37, 38, 41
- park
- population-see "Population ..... 93, 95
- in the Senate
91
806
91
806
- Royal Commissions ..... 124
- schools-see "Education
- timber, estimated stand of ..... 512
- unemployment assistance. ..... 318
- water power of-see "Water Power" ..... 320-4- welfare services
- workmen's compensation ..... 772-3
Newspapers, daily, weekly ..... 891-3
- revenue from sales of
521, 982
Newsprint, exports of
521
521
- production
521
521
New Zealand, tariff arrangements with ..... 1003
- trade with-see "Trade by country" ..... 1008
Nicaragua, tariff arrangements with
982
Nickel, exports of.
1123, 1124
1123, 1124
- monetary use of 339, 540 ..... 51, 554
Nigeria, Federation of, tariff arrangementswith1003
- trade with-see "Trade by country"
Non-metallic mineral products industries activity of .670, 683,


## Pagr



- Regional Broadcasting Agreement......... 869, 876
- Atlantic Treaty Organization, Canada and

176-7, 1168, 1172, 1174, 1176, 1183
Northern Canada Power Commission
$143,150,648,664$

- Transportation Company Limited...........143, 150

Northwest Territories, administration of....105, 118-9

- allowances for blind persons

316

- for disabled persons

317
-family 313

- yarea......................................... $34,118,444$
- births and birth rates 237, 243, 254, 250
- creation of
.237, 254, 260
- deaths and death rates..................237, 254, ${ }_{306}^{260}$
- diseases, notifiable.

343, 353, 356

- electric power statistics ......643, 648, 651-5, 664
- forested area. .441, 511, 512
- government revenue, expenditure and debt

1036-7, 1057-61, 1063

- health services........................281-4, 286, 307
- hoepitals.....................281-4, 298-9, 301-2, 304
- lakes, principal................................... 14
- manufactures......................................689. 695
-marriages........................................237, 269
- mineral production-see "Mineral" and Minerals
- motor vehicle and traffic regulations.

800-4

- mountains and other heights.

19

- municipalities.

123

- old age assistance...................................... ${ }_{316}^{123}$
- security

312

- parks

34, 38

- population-see "Population"
- representation, House of Commons.................. $804,80,800,806-7$
- roads and highays. 318
- unemployment assistance........

1008

- trade with-see "Trade by country"

Notes, Bank of Canada.
120, 1122-3

- chartered bank. 1122
Notifiable diseases
305-6
Nova Scotia, admission to Confederation. -6
- agricultural college.

468

- land 441
- produce, index numbers of. 474, 498
- services 463
- Agriculture and Marketing, Dept. of........... ${ }_{463}$
- allowances for blind persons. ................. 316
- for disabled persons. 317
- family

313
— mothers'........................................ 322

- youth

7, 34, 441

- births and birth rates............236, 243, 244, 250
- capital and repair expenditures................ 712
- construction industry...................716, 717, 719
- co-operative associations. ....................... 919
- deaths and death rates.................236, 254, 259
- diseases, notifiable 306
- divorces.......................................... 271
- earnings, average in industry

751, 754

- education-see "Education'
- electric power statistics. .......642, 644, 651-5, 656
- employment, index numbers of . ..............750, 751
- and payrolls

472, 473

- loans approved..............................459, 461
- statistics,
- statistics, Census

503-5

- fisheries administration
- fishery products-see "Fisheries'
- forest resources-see "Forests"
- forested area.

441, 511, 512

- forestry program 515. 527
- freight movement 921, 922
- government

105-6, 108-9

- debt.

1062, 1063

- revenue and expenditure................i036-7, 1057-61

Nova Scotia, health services....281-4 290-7 Page
俗 - hospitals.

- immigrants-see "Population";
- judicial convictions-see "Criminal and judicial"
- labour legislation 737-41
- lakes, principal
- libraries. ..... 378, 379,380
- Lieutenant-Governor ..... 108
- livestock. ..... 481
- manufactures ..... 688, 690-1
- marriages. ..... 236, 268 ..... 236, 268
- mineral production-see "Mineral" and'Minerals'
- mining, provincial aid to ..... 586
- laws of-see 'Mining'
- motor vehicle and traffic regulations. ..... 800-3
- mountains and other heights.
17
17
- municipalities. ..... $119-20,121,123$
- old age assistance ..... 316
security ..... 312
- parks. ..... $34,37,38-9$, 42
- population-see "Population
656
- Power Commission ..... 93, 95
- in the Senate. ..... 91
- Research Foundation ..... 806
- roads and highways
124
124
- schools-see "Education"
- unemployment assistance. ..... 318
- insurance benefits ..... 771
- Voluntary Planning Organization ..... 1115
- water power of-see "Water Power' - welfare services ..... 320-4
- workmen's compensation. ..... 772-3
Nuclear power 391-6, 643-4, 646-7, 650
Nursery stock ..... 496-7
Nuts, consumption of ..... 500
Oats, acreage, production and value of....475, 476, 478471
- farm income from
- international statistics of ..... 507
- prices of ..... 475, 499, 911
- receipts and shipments of ..... 913
- stocks of ..... 479
Observatories Dominion ..... 399-401, 582-3
Occupations of immigrants ..... 223-6
- of persons convicted of indictable offences ..... 417
$763-4$
Offenders. criminal ..... 414-23, 429
Office of the Custodian ..... 162
- of the Representation Commissioner ..... 138
Official appointments, register of ..... 126
Oil fields
575-6
575-6
- and gas legislation ..... 590-1, 592
- pipelines ..... 855-60
Oils and fats, consumption of ..... 501
Old age assistance. ..... $315-6$
Ontario security ..... 31
- agricultural colleges and schools
468
468
- land ..... 441
- produce, index numbers of. ..... 474, 498
- Agriculture, Dept. of ..... $464-5$
$464-5$
- allowances for blind persons. ..... 316
- for disabled persons. ..... 317
- family ..... ?22
- mothe ..... 314
- area. ..... ї, 34, 44 ..... ї, 34, 44
- births and birth rates
- births and birth rates ..... 236, 243, 244, 250 ..... 236, 243, 244, 250
- capital and repair expenditures ..... 712
- construction irdustry ..... 716, 717, ${ }_{919}^{719}$ ..... 716, 717, ${ }_{919}^{719}$
- o-operative asstrions ..... 336, 254, 259
- diseases, notifiable ..... 306
- divorces ..... 751,75

page
Population, Indians. 202-3
236-41, 259-63, 276
- infant mortality of- intercensal esti202, 1262- languages and $n$199-200
- marital status of ..... 196
- marriages and divorces of ..... 236-41, 267-71, 276
- maternal mortality of ..... 236-7, 263-5, 276
- metropolitan areas ..... 186, 188
184, 185, 236-41,
184, 185, 236-41, - natural increase of ..... 196-7
origins of.
-7
-7
- of provinces and territorie
198-9
- rural and urban ..... 186-7
- sex distribution ..... 194
- urban and rural ..... 186-7209-14
Pork, consumption of ..... 501, 502
prices of
816-24, 835, 837
816-24, 835, 837
Pos ..... 817-22, 82
Portugal, tariff arrangements with ..... 1008
-trade with-see "Trade by country" ..... 890
Postal Union, Universal ..... 174-5
Post Office, air mail services ..... 889
- Dept., Act administered by ..... 890, 1041
expenditure re
138, 889-90
138, 889-90
- ross postal revenue of ..... 890
- n money order system ..... 890
number of offices ..... 889
- organization of. ..... 889-90
rural mail delivery ..... 889
- statistics ..... 889-90
Potash production ..... $540,552,567-8$
Potatoes, consumption of ..... 500
- production, yield and value of ..... 45, 477
Poultry, farm income from ..... 471
- meat, production and consumption of ..... 483, 501
- numbers and values of482-3
Power, electric, construction 644-8, 715exported
$652,653,983$
- generating capability ..... 648-50
- nuclear, generation of ..... 643-4651-5
二 statistics of ..... 642-3, 651, 653
637-8
water-see "Water Power
151, 462
Prairie Farm Assistance Act ..... 151,445 ..... 446
- Grain Advance Payments Act ..... 480
- Provinces, grain production
154, 155, 934
154, 155, 934
Precious Metals Marking Act
Precious Metals Marking Act ..... 52-72
Preferential tarif ..... 1000-4
Preferred stocks, index numbers of ..... 952
Premiers, provincial ..... 106-17
Press, Canadian Prices of agricultural products891-5
$475,493,494,495,498-9,945$
- consumer, index ..... $944-6$
- field crop ..... 475, 499, 909, 911
- general ..... 941-52
- retail, of staple foods. ..... 945
- security, index numbers of. ..... 950-2
- Support Board, Fisheries. ..... 142, 148, 613941-3
- world index numbers ..... 943, 946
Primary metal industries, activity of ..... 682, 689-95
Prime Ministers since Confederation ..... 86
Prince Edward Island, admission to Confederation ..... 82
- agricultural college and school ..... 468
- produce, index numbers of. ..... 474, 498
- Agriculture, Dept. of ..... 463
Prince Edward Island, allowances for blind persons ..... 316
- for disabled persons ..... 313
- mothers ..... 322
- area. ..... 7. 34, 44
- capital and repair expenditures. ..... 712
- co-pperative $2 s{ }^{-}$ ..... 919
- deaths and death ra ..... 259
306
- divorces ..... 271
- earnings, average in industry ..... 751
- education-see "Education"651-5, 656
- employment, index numbers of ..... 750,751
- and payrolls. ..... 472, 473
- loans approved ..... 459, 461
- statistics, Census ..... 503-5
eld crops614
- fishery products-see "Fisheries
- forest resources-see "Forest"
- forested area ..... 441, 511, 512
- forestry program ..... 515,52
- freight movement ..... 105-6, 107-8
- debt ..... 1062, 1063
- revenue and expenditure ..... $281-4,290-7,307,308$- hospitals281-4, 298-9, 301-3
- immigrants-see "Population"
- judicial convictions-see "Criminal and judicial"
- labour legislation ..... 737-41
- libraries ..... 378, 379
- Lieutenant-Governor ..... 107
- livestock ..... 481
- marriages. ..... 236, 268
- motor vehicle and traffic regulations. ..... 800-3
- municipalities. ..... 12
-_security ..... 312
— parks ..... 34, 37, 38, 41-2
- population-see "Population" - representation in the House of Commons ..... 93, 95
- roads and highways. ..... 804, 805, 806- schools-see "Education'
- unemployment assistance ..... 318
- insurance benefits ..... 771
- water power of-see ..... 320-4- workmen's compensation
2-Printing Bureau, Canadian Government
131
- revenue from ..... 894-5
Private hospitals. ..... 298-300
- schools ..... 382-3, 385, 406-9
Privy Council, expenditure re ..... 1041
- members of ..... 88-9, 126
Production, agricultura ..... $473-8,483-97,505-7,914$
- defence ..... 131-2, 1181-3
- electric power ..... 651-2, 655-64
- field crops ..... 474-8
- forestry ..... 516-21
- fur ..... 622-7
- manufacturing ..... 687-95
- mining and minerals ..... 538-81, 594-5
- trends, industry ..... 1080-5
Productivity trends, aggregate ..... 1086-9
Proprietary corporations, Crown ..... 143-4, 156, 162
Provinces, areas of 7, 34, 441

Publications, sale of official federal.
Page ..... 1202-3
$\overrightarrow{\text { Publishing, printing and alied industries }}$
670-1, 682, 689-95
Pulp and paper industry............ ..... 519-21, 684 ..... 383, 534-5
- exports
520, 521
- production ..... 520,521 ..... 521
- statistics, world
Pulpwood, production, consumption, imports
Pulpwood, production, consumption, imports and exports ..... 514, 517
Quarantine and sick mariners hospitals ..... 286-7
Quarrying, regulations re ..... 592 ..... 553
Quartz production
Quartz production
Quebec, admission to Confederation ..... 82
- agricultural colleges and schools.
44
44
- produce, index numbers of. ..... 474, 498
- ..... 463-4
- Agriculture and Colonization, Dept. of ..... 463-4
- allowances for blind persons ..... 316
- for disabled persons ..... 317
-family. ..... 313
- mothers ..... 322
- area.
- area. ..... 7, 34, 44 ..... 7, 34, 44
- births and birth rates ..... 250
- capital and repair expenditures ..... 712
- Collective Agreement Act. ..... 738
- construction industry ..... 716, 717, 719
- co-operative associations. ..... 919
- deaths and death rates. ..... 236, 254, 259
- diseases, notifiable ..... 306
- divorces ..... 271
- earnings, average in industry ..... 751, 754
- Economic Advisory Council ..... 1115-6
- education-see "Education".
- electric power statistics. ...642, 645-6, 651-5, 657-8
- employment, index numbers of ..... 750, 751
- and payrolls.
472, 473
- farm income
459, 461
- loans approved ..... 503-5
- field crops ..... 476-8
- fisheries administration ..... 616-7
- fishery products-see "Fisheries"
- forest resources-see "Forest'- forested area.441, 511, 512
- forestry program. ..... 515, 528-9
- freight movement.
$105-6,110-2$
- government
1062, 1063
- revenue and expenditure. ..... 1036-7, 1057-61
- health services ..... 281-4, 290-7, 307, 308
- hospitals. ..... 281-4, 298-9, 301-2, 304
- Hydro-Electric Commission ..... 645-6, 658
- immigrants-see "Population"
- judicial convictions-see "Criminal and judicial"
- labour legislation ..... 737-41
- lakes, principal
- lakes, principal ..... 12 ..... 12
- libraries ..... 378, 379, 380
- Lieutenant-Governor ..... 110
- livestock
- livestock ..... 481, 916 ..... 481, 916 ..... 236, 268
- manufactures
- manufactures
- mineral production-see "Mineral" and
"Minerals'
- mining, provincial aid to ..... 587
- laws of-see "Mining ..... 800-3
- motor vehicle and traffic regulations
17-8
17-8
- mountains and other heights
- mountains and other heights ..... 123
- old age assistance ..... 315
—— security ..... 312
- parks. ..... 34, 39, 42-3
- Pension Plan. ..... 278
- pipelines ..... 857, 858
- police force. ..... 433, 435, 436


|  |  |
| :---: | :---: |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

Royal Canadian Sea Cadets.

- Commission on transportation. ..... 1174Page
- Commissions, federal and provincial. ..... 124-5
- Style and Title of The Queen ..... 671, 681, 691-4
Rubber industries, activity of
186-7
186-7
Rural and urban population
Rural and urban population
478
478
- farm income from ..... 471
- prices of ..... 475, 499
- receipts and shipments of ..... 913
- stocks of ..... 479
- supply and disposition of ..... 912
Safety legislation, industrial ..... 739, 741
- trafnc. ..... 802 ..... 802
St. Lawrence-Great Lakes traffic ..... 828-32
- River ship channel ..... 833
- Seaway Authority ..... 143, 150,
828-32, 835, 837
$\overline{\text { Solaries }}$ stand.
Salaries and wages-see "Wages"
716, 751-4
- in construction.
- in construction. ..... 156-63
- in Federal Government ..... 796, 800
- in manufact
930-2
Sales of alcoholic beverages
903
- of farm implements and equipment. ..... 904
- financing.
904
- of new motor vehicles. .....
600, 607 .....
600, 607
Salmon, production of canned
Salmon, production of canned
600, 603
600, 603
Salt production ..... 540, 553, 568
Sand and gravel production. ..... 540, 553, 571-2
Saskatchewan, admission to Confederation. ..... 82
- agricultural colleges and schools. ..... 468
- land.441
- produce, index numbers of ..... 474, 498
466-7
- Agriculture, Dept. of ..... 466-7
- allowances for blind persons ..... 316
- for disabled persons. ..... 317
313
- family ..... 313
- youth ..... 314
- area. ..... 7, 34, 441
- births and birth rates. ..... 237, 243, 244, 250
- capital and repair expenditures
$716,717,719$
- construction industry
- co-operative associations
237, 254, 259
- deaths and death rates ..... 259
306
271
- divorces. ..... 271
- earnings, average in industry ..... 751, 754
- education-see "Education"
- electric power statistics.......643, 647, 651-5, 661-2
- employment, index numbers of ..... 750,751
- and payrolls ..... 163
- farm income. ..... 472, 473
- loans approved ..... 459, 461 ..... 503-5
- field crops
- field crops
- fisheries administration ..... 619-20
- fishery products-see "Fisheries'
- forest resources-see "Forest'- forested area.441, 511, 512
- forestry program ..... 515, 531-2
- freight movement ..... 921, 932
- government. ..... 105-6, 114-5 debt. ..... 1062, 1063
insurance. ..... 1163-4
- revenue and expenditure ..... 1036-7, 1057-61
- health services. ..... 281-4, 290-7, 307, 308
- hospitals. ..... 281-4, 298-9, 301-2, 304
- immigrants-see "Population"445, 446
- irrigation and land conservation
- judicial conviction ..... 1".
- labour legislation ..... 737-41
- lakes, principal.
13
13
- libraries ..... 378, 379, 380
- Lieutenant-Governor. ..... 114
Page
Saskatchewan livestock ..... 481, 916
- manufactures ..... 688, 693
- marriages. ..... 237, 268
- mineral production-see "Mineral" and
Minerals"
- mining, provincial aid to ..... 588-9
- laws or-see Mining ..... 800-3
- motor vehicle and traffic regulations
18
18
- mountains and other heights
$119-20,122,123$
$119-20,122,123$
- old age assistance ..... 316
- security. ..... 312
- parks. ..... $34,37,39,40,45$855-9
- population-see "Population".
- Power Corporation ..... 647, 661-2
- representation in the House of Commons 93, 99
- in the Senate ..... 91, 92
- Research Council ..... 804, 805, 806
- roads and highways.
- schools-see Education
- unemployment assistance. ..... 318
- insurance benefits ..... 771
- water power-see "Water Power
- welfare services ..... 320-4
- workmen's compensation. ..... 772-3
Satellite, communication by ..... 861-2, 874
Savings Bank, Post Office ..... 1133-4
- bonds, Canada. ..... 1145
- institutions, provincial government.
- institutions, provincial government. ..... 1134 ..... 1134
- personal ..... 1078
Sawmilling industry ..... 517-8
Scholarships and fellowships ..... $354,376,384,385$
School corporations, debt of. ..... 1067
Schools-see "Education"
428, 429
- training for delinquents
150
150
Science Council of Canada.
Science Council of Canada. ..... 382-411
cientific and industrial research
cientific and industrial research ..... 597-604
Sea fisheries Seaway Authority, St. Lawrence5, 837143, 150, 828-32, 835, 837
Secretary of State Dept., Acts administered
by ...........................154, ..... 228-30
conditional grants and shared-cost pro- - conditiona ..... 1056
- functions of ..... 1041Securities guaranteed by Federal Government. 1043-4
Security, social
- prices, index numbers of ..... $329-33$
$950-2$1043-4
Senate, indemnities and allowances of Members. 100-1 ..... $100-1$
- Members of and representation in
- Members of and representation in
Service co-operatives. ..... 919
- establishments ..... 905-7
- eating and drinking places ..... $900-1$
- industries, average wages and salaries. ..... 751, 752
Services Colleges, Canadian. ..... 1178-9
Sessions of Parliament, durations of ..... 89
Sex distribution of adult offenders...416, 419-20, ..... 422-3
- of immigrants ..... 222-3
- of population. ..... 194
- ratios of live births ..... 242-3
Shared-cost and conditional grants programs. ..... 1050-6
Sheep and lambs, marketing of. ..... 15, 916
- prices of ..... 499
- numbers and values of. ..... 481


| Pacs | Page |
| :---: | :---: |
| Trade agreements with Commonwealth countries． | Trangport Dept．，expenditure re．．．．．．．．．．．．．．．410， 1041 －functions of．．．．．．．．146，410，783－8，843－4，875－9 |
|  |  |
| Commerce Dept．．Acts adminiatered by |  |
| 140，993－6 |  |
| 998 | an transit systems．．．．．．．．．．．．．．．．．．．${ }^{815}$ |
| programs of．．．．．．．．．．．．．．．．．．．．．．．．．．．． 1050 |  |
| Exhibition Commission．．．．．．．．．．．．．．． 999 | $\pm$ equipment indugtries，activity of．671－2，682，689－95 |
| ort Credits Lnsurance Corporstion 1041 | －government promotion and regulation of．．．． －Royal Commizaion on．．．．．．．．．．．．．．．．．．．． $785-8$ 786 |
| 143，148，9990 | Trapping，fur．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．622， 626 |
| ， 993 | Travel between Canads and other countries．．．1010－4 |
| 993－1010 | －Bureau，Canadian Government．．．．．．．．．．．．． 898 |
|  | －distances between certain citiea． <br> Treasury Board <br> 125－9． 141 |
| of international pryments．．．．．．．．．．．．．．．． 1089 －94 | Treaties，trade．．．．．．．．．．．．．．．．．．．．．．．．．1001－10 |
| by commodity ．．．．．．．．．．．．．．．．．．957－9，961－3，980－7 | Tree species，forest．．．．．．．．．．．．．．．．．．．．．．508－10．512－3 |
| by country $\ldots \ldots . . . . . . . . . . . . . . . . . . . . . . . . .9 .971-80$ | Trends in economic aggregates ．．．．．．．．．．．．．．1068－11年7 |
| by geographic area．．．．．．．．．．．．．．．．．．．．．．，970－80 | Tributaries of principal rivers，lengths of．．．．．． 11 |
| by section and stage of fabrication．．．．．．．．． 987 －92 | Trinidad and Tobago，tariff arrangemente with 1004 |
| －capital expenditures in wholesale and retail．，${ }_{817-22}^{711}$ | Trade with－Bee＂Trade by country＂．．．．．．．．．．．．．．．．．．．．．．．313－4， 922 |
| combinations in restraint of．．．．．．．．．．．．．．．．．${ }^{\text {a }}$ 928－30 | Trust and loan companies．．．．．．．．．．．．．．．．．．．．．．．1135－40 |
| Commissioner Service，Canadian．．．．．．．．．140，983－8 | －cotopanies，estates，trust and agency funds．． 1140 |
| with Commonwealth and other countries．．．970－80 | Tuberculosis hospitals．．．．．．．．．．．．．．．．．．．．297，299－304 |
| with leading countries．．．．．．．．．．．．．．．．971－2，979－80 | $\rightarrow$ apecial programs for treatment of．．．．．．．．．．．${ }^{293}$ |
| disputes． | Turkey，tariff arrangements with．．．．．．．．．．．．．．． 1009 |
| Government aids to and control of．．．．．．．． $823-37$ | Turkeys，numbers |
|  |  |
|  |  |
|  |  |
|  | da，tariff arrangements with．．．．．．．．．．．．． 1004 |
|  |  |
| marks，administration of．．．．．．．．．．．．．．．．．．．${ }^{\text {a }}$ 936 | insurance．．．．．．．．．．．．．．．．．．．．．．．．．． $150,76 \%-71,1034$ |
| 二 schools．．．．．．．．．．．．．．．．．．．．346－9，352，353，354， 263 －services，foreign．．．．．．．．．．．．．．．．．．．．．．．．．．．．．993－1000 | Commission．．．．．．．．．．．．．．．．．．．．．．．．142，150． 788 |
| －standards．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．${ }_{834}$ | persons insured under．．．．．．．．．．．．．．．．．．．．．．． 770 |
|  | in labor force．．．．．．．．．．．．．．．．．．．．．．．．．．．742，744，746 |
| －treatment of gold in．．．．．．．．．．．．．．．．．．．．． 969 | NESCO，Canada sud．．．．．．．．．．172，174，354，376－7 |
| 二tariffs，development of．．．．．．．．．．．．．．．．．．．．．．．1000－10 |  |
|  |  |
| －wholesale and retail．．．．．．．．．．．．．．．．．．．．．．．897－9．902－5 |  |
|  |  <br> United Arab Republic，tariff arrangements |
| －World，Canada＇s Participation in the Chang－ ing Pattern of，1953－66． | with．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． 1009 $\rightarrow$ Kingdom－see＂Brath＂Brade by country＂． |
|  | Nations，Cansda snd．．．．．．．．．．．．．．171－8，354，376－7 |
| －at Canadian border pointa．．．．．．．．．．．．．．．．．．．．．． 1013 |  |
| －Great Lakes－St．Lawrence．．．．．．．．．．．．．．．．．．．．．${ }_{\text {－}}^{\text {－}}$ 828－32 |  |
|  | Food and Asriculture Organization．．．．．．．172，173 |
|  |  |
| －regulations，motor vehicle and．．．．．．．．．．．．．．． $800-4$ | Inter－governmental Maritime Consultative |
| －road and highway ．．．．．．．．．．．．．．．．．．．．．．．．．．．．811－4． 1013 | Organization．．．．．．．．．．．．．．．．．．．．．．．．172， 174 |
|  | International Atomic Energy Agency．．．．．172，176 －Bank for Reconstruction and Develop－ |
| －truck．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．i1818－4， 922 |  |
| Training，air force．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．8488 | Civil Aviation Organization．．．．．．．i72，174， 843 |
|  | Development Association ．．．．．．．．．．．172，175－6 |
| －naval．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．1173－4，1178－80 | Finance Corporation，．．．．．．．．．．．．．．．．．．．178， 175 |
| －Behools for delinquents．．．．．．．．．．．．．．．．．．．428， 429 | Labour Orcanization．．．．．．．．．．．．．．．．． 172,173 |
| Trane－Canada Air Lines－see＂Air Canads＂ <br> —Highway System．．．．．．．．．．．．．．．．．．．．．．．．．．139，s85－s | Law Commisesion．．．．．．．．．．．．．．．．．．．．．．．．．．． 172,176 |
|  | Telecommunication Union．．．．．．．．．．．．．．．172，178，181 |
| Transit systems，urban．．．．．．．．．．．．．．．．．．．．${ }^{\text {a }}$ ， 815 | 1738 |
| Transport Bosrd，Air．．．．．．．．．．．．．．．．．．．．．．．．130，787， 854 <br> －oivil air．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．888－55 |  |
|  | ited States dollar in Canads，priee of ．．．．${ }^{\text {a }}$ ． 1143 |
| －Commissioners，Board of．．．．．．．104，130，786＊7， 837 | trade with．．．828，970－2，975，979，980，981－7，986－91 |
| －Dept．，Acts administered by ．．．．．．．．．．．．．． 155 | －agreeraent with．．．．．．．．．．．．．．．．．．．． 1010 |
|  | Univeraal Postal Union．．．．．．．．．．．．．．．．．．．．．172，174－6 |
| air вervices．．．．．．．．．．．．．．．．．．．．．．．140，845－8，849－52 | Universities－m |
| －canals <br> conditional granta and shared－cost pro－ trams of．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．．． 1056 | University Capital Grants Fund．．．．．．．．．．． 381 |
|  | Grants Program．．．．．．．．．．．．．．．．．．349，361 |



| Page | Page |
| :---: | :---: |
| Yukon Territory creation of $\qquad$ 237. $254,{ }_{260}^{82}$ | Yakon Territory, mining taws of see "Mining". <br> - motor vehicle and traffic regulations........ 800-4 |
| - disesses, notifiable........................... 300 , 308 | - mountains and other heights.................17, 18-9 |
|  | - municipalities............................... 123 |
| - electric power statistics...t.....643, 848, 651-5, 664 | - old age assistance. . . . . . . . . . . . . . . . . . . . . . . 316 |
| - fishery products-see "Fisheries". ${ }_{\text {Ioreated area..................... 441, 511, } 512}$ |  |
| - government revenue, expenditure and debt 1036-7, 1057-61, 1063 | - representation in the House of Commons.... 93, 100 <br> - roads and highways.................... 804, 805, 806-7 |
| - health services. .....................281-4, 280, 307 | - unemployment assistance.................... 318 |
| - hospitals.....................281-4, 298-9, 301-2, 304 | - water power of-see "Water Power". |
|  |  |
| - mineral production-see "Mineral" and "Minerals". | Zine production..................539. 540, 552, 558-60 - world production of............................ $594-5$ |


l


[^0]:    Miscellaneous
    Maritime Provinces = Prince Edward Island, Nova Scotia and New Brunswick
    Atlantic Provinces = Newfoundland, Prince Edward Island, Nova Scotia and New Brunswick
    Central Canada $=$ Quebec and Ontario
    Prairie Provinces=Manitoba, Saskatchewan and Alberta
    Btu. $=$ British thermal unit (coal)
    Mcf. $=$ thousand cubic feet (gas)
    n.e.s. $=$ not elsewhere specified
    n.o.p. $=$ not otherwise provided for
    psi. (atomic research) $=$ pounds-force per square inch (pressure)
    D.B.H. (forestry)=diameter at breast height.

[^1]:    * Prepared by Dr. Trevor Lloyd, MeGill University, Montreal.

[^2]:    * A description of the current surveying and mapping aervice of the federal Department of Energy, Mines and Resources is given at pp. 32-33.

[^3]:    * Revised by the Geographical Branoh, Department of Energy, Mines and Resources, Ottawa.
    $\dagger$ Unitad Nations Statiatical Yearbook, 1966.

[^4]:    ${ }^{1}$ Via Strait of Canso.

[^5]:    For footnotes, see end of table.

[^6]:    1 The eammit of the Cypress Hills, with an elevation of 4,810 feet, is in Alberta. British Columbia boundary, ${ }^{3}$ Psrt of the British Columbia-Alasks boundary.

[^7]:    - Prepared by W. D. MeCartney with Grenville and Interior Plains sections from an earlier report by A. H. Lang and revieion of Cordilleran section by D. J. T. Caraon, Geological Survey of Canada.

[^8]:    * This deposit was found by astute geological selection of a large area followed by airborne and ground geophysical surveys and, finally, drilling. No sigaificant massive sulphide deposita of this type had formerly been known in this longeatablished gold-mining distriet.

[^9]:    * Prepared by H. G. Claggen, Special Projecta Seotion, Editorial and Information Division, Department of Energy, Mines and Resources, Ottewa.

[^10]:    * No information on the flora of Canada is given in this publication but the reader is referred to a detailed apecial article on the subject. prepared by Dr. Homer J. Sooggan of the National Museurn of Canada, which appears in the 1966 Year Book at pp. 35-61.

[^11]:    1 Not yet formally established.

[^12]:    1 Sites for which visitor data are available.

[^13]:    *Prepared in the Information and Historical Division, National Capital Commission, Ottawa.

[^14]:    * A series of special articles relating to the wildife resources of Canada has been carried in previous editions of the Year Bool. See the list of special articles in Chapter X XVII, Part II, under the heading of "Fauna and Flora".

[^15]:    * Sections 1 snd 2 of this part were prepared by the Meteorological Branch of the Department of Transport, Toronto. A comprebensive study on The Climate of Canada, also prepared by the Meteorological Branch, was carried in the 1959 Year Book, pp. 23-51. Supplementing that teatual material, detailed tabulations of climatic factors for 45 individual meteorological stations across the country were carried in the 1960 Year Book, pp, 3i-77. A reprint is available from the above source giving the complete tertual and tabular data.

[^16]:    Total rainfall and one tenth of the total apowfall.

[^17]:    ${ }^{1}$ Total rainfall and one tenth of the total anowiall.
    \& Any differences noted between values given here for certnin Arctic stations and those given for the game stations in the tables st pp. 64-72 result from differences in computation periods.

    I No appreciable period free from frost.

[^18]:    - Prepared by H. A. Thompson, Meteorological Branch, Department of Transport, Toronto.

[^19]:    * In a reprint of this article, available from the Meteorological Branch, Department of Transport, 315 Bloor St. West, Toronto 5 , Ont., additional data are given in the climatic tables, including mean monthly maximum and minimum temperatures, percentage frequency of days with minimum temperatures at or below $-10^{\circ} \mathrm{F}$ to $-50^{\circ} \mathrm{F}$, cloud amounts, etc.

[^20]:    ${ }^{1}$ Average of less than 0.005 in.

[^21]:    ${ }^{1}$ Avarage of lese that 0.05 in.

[^22]:    ${ }^{1}$ Average of less than 0.006 in.

[^23]:    * Except where otherwise indicated, the information in this Chapter bas been brought up to the date of Oet. 1, 1966. Certain changes occurring between that date and the date of going to press will be found in an Appendix to this volume. Also, official appointments made up to the date of going to press will be found in Chapter XXVII (soe Index).

[^24]:    *See A Consoltidation of The British North Americt Acts 1867 to 1980, consolidated by Elmer A. Driedger as of Jab. 1, 1964. Queen's Printer, Ottawa. 75 cents (Catalogue No. YX1-164). A further amendment was made in 1964 respecting old age pensions (ase p. 90).

[^25]:    "Frtracted from "The Provincee and Treaty-Making Powers", Appendiz to Votes and Proceedings of the House of Commons of Canada, No. 8. Apr. 26, 1965.

[^26]:    - Available from the Queen's Printer, Ottawa. $\$ 2$ (Cat. No. J2-1665).

[^27]:    * Senator the Hon. Gideon Decker Robertson held the portifilio of Minister of Labour for the periods Nov. 7, 1918 to Dec. 29, 1921 and Aug. 7, 1980 to Feb. 2, 1932; Senator the Hon. Malcolm Wallace McCutcheon served as Minister of Trade and Commerce from Feb. 12 to Apr. 22, 1963.

[^28]:    I Changes occurring between Oct. 1, 1966 and the date of soing to press will be carried in an Appendir to this volume.

[^29]:    ${ }^{1}$ The ordinary legal limit of duration for each Parliament is five years.
    2 Duration of Parliament in years, months and days. The life of a Parliament is counted from the date of return of election writs to the date of dissolution, beth days inclusive (BNA Act, Sect. 50). ${ }^{2}$ Date of general election. Writs returnable. $\quad$ S Dissolution of Parliament. ${ }^{2}$ Iacludes long adjournment from Nov. 29, 1956 to Jan. 8, 1957. ${ }^{3}$ Includes lonz adjournment from July 13 to Sept. 7, 1961 . Government defeated in House of Commons on Fant of confidence motion. ${ }^{2} 18$ Includes long adjournment from Aug. 2 to Sept. 30, 1963 . 10 Includes long adjournment from Dec. 18, 1964 to Feb. 16, 1965. ${ }^{11}$ House adjourned on June 30 until Sept. 27 but diasolved on Sept. 8, 1965 . is Includes long adjournment from June 30 to Sept. 27, superseded by dissolution on Sept. 8, 1965.

[^30]:    "Sect. 2.--Eighty-five members of the House of Commons shall be elected for the Province of Ontario, seventy-five for the Province of Quebec, twelve for the Province of Nova Scotia, ten for the Province of New Brunswick, fourteen for the Province of Manitoba, twenty-two for the Province of British Columbia, four for the Province of Prince Edward Island, seventeen for the Province of Saskatchewan, seventeen ior the Province of Alberta, seven for the Province of Newfoundland, one for the Yukon Territory and one for Mackenzie district of the Northwest Territories, thus making a total of two hundred and sisty-five members."

[^31]:    ${ }^{1}$ Northwest Territories in 1963 and 1965.

[^32]:    "Eighty-ejght members of the House of Commons shall be elected for the Province of Ontario, seventy-four for the Province of Quebec, eleven for the Province of Nova Scotia, ten for the Province of New Brunswick, thirteen for the Province of Manitoba, twenty-three for the Province of British Columbia, four for the Province of Prince Edward Island, thirteen for the Province of Saskatchewan, nineteen for the Province of Alberta and seven for the Province of Newfoundland."

[^33]:    ${ }^{1}$ Appointed to Senate July 8, 1966; see Table 11 for by-election.
    ${ }^{2}$ Reaigned Aug. 1, 1966; see Table 11 for by-election.

[^34]:    ${ }^{1}$ Died Aug. 31, 1968; see Appendix for by-election,

[^35]:    ${ }^{1}$ Byelections beld between Oct. 1. 1966 and the date of going to press will be carried in an Appendix to this volume.

[^36]:    1 Each voter in the double-member constituency of Queens County, P.E.I., had two votes; in 1865, 28,250 voters on the list cast 44,895 votes. $\quad$ Each voter in the double-member constituency of Halifax, N.S., had two votes; in 1965, 124,633 voters on the list cast 184, 153 votes.
    z Electoral District of Yukon. iElectoral District of Mackenzie River in 1962 and Electoral District of Northwest Territories in 1963 and 1965.

[^37]:    ${ }^{1}$ First appointed a Judge of the Supreme Court, Feb. 9, 1940.

[^38]:    *More detailed information concerning provincial judiciaries is given in the 1954 Year Book, pp. 48-55; a reorganization of the Supreme Court of Nova Scotia became effective Aug. 1, 1966.
    $\dagger$ Except where indicated, the information given in this Section is brought up to June 30, 1968. Any important changea occurring between that date or the date given tor an individual province and the time of going to press will be found in an Appendiz to this volume.

[^39]:    ${ }^{1}$ Not yet in aession by Oct. 1, 1966.

[^40]:    1 Life of Legislature not erpired at June 30, 1968.

[^41]:    ${ }^{1}$ Life of Legialature not expired at June 30, 1966.

[^42]:    *Further information on officials of various Federal Government departments serving the Yukon Territory may be obtained from the Director, Northern Administration Branch, Department of Yndian Affsirs and Northern Development, Ottawa.

[^43]:    * Revised (as at Jan. I, 1966) jn the Governments Division, Financial Statistics Branch, Dominion Bureau of Statistics.

[^44]:    ( Municipatities grouped according to their official nomenclature, which is roughly indicative of size and nature (see footnote \%). ${ }^{2}$ Municipalities grouped under the classification devised by the Dominion-Provincial Conferences on Municipal Statistics designed to bring municipalities into comparable groups for atatistical presentation. a Includes the 60 local improvement districts; excludes commissions. "The Montreal Metropolitan Corporation. $\quad$ 'The Municipality of Metropolitan Toronto, ${ }^{\text {E }}$ The Metropolitan Corporation of Greater Winnipeg. ' Designated by the province as towns (54), rural districts (4) and local improvement districts (8); all operate under the same Act. ${ }^{2}$ Classified by the province as community councils. Rural municipalities are designated by different names in the different provinces.
    ${ }^{10}$ Includes the 18 improvement districts. 11 Includes the 3 units of sell-government known as suburban municipalities; excludes the unincosporated local government districts. 12 Excludes the 12 unincorporated local improvement districts. ${ }^{13}$ Includes the 28 county municipalities; excludes the unincorporated improvement districts and the special areas. ${ }^{4}$ Excludes the unincorporated improvement districts, the local districts and the new regional districts.

[^45]:    * Appointed prior to May 1, 1965 bat omitted from the list publisbed in the 1968 Year Book.

[^46]:    *Prepared ander the direction of H. R. Balls, Comptroller of the Treasury, Otiawa.

[^47]:    *As at Oct. 1, 1966; any major changes taking place between that date and the time of going to press will be carried in an Appendix to this volume. Also the accompanying organization chart is brought up to the lateat poobible date before going to prese; see lower right-hand corver.

[^48]:    - See Chap. XXVII. Part IV.

[^49]:    * Not all Crown corporations are subject to the provisions of the Financial Administration Act. For example, the Canadian Wheat Board, the Bank of Canada and its subsidiary the Industrial Development Bank, because of the special nature of their functions, are excluded from operations of the Crown corporations Part of the Act and are governed by their own Acts of incorporation as is also the Eastern Rockies Forest Conservation Board, a joint federal-provincial enterprise, and the Canadian Corporation for the 1967 World Exhibition. The Canada Council was set up under the Canada Council Act (assented to Mar. 28, 1957) as a Crown corporation but has been declared not an agency of the Crown and hence is not included in the Schedules to the Financial Administration Act; the same situation applies to the Atlantic Development Board set up under the Atlantic Development Board Act (assented to Dec. 20, 1962), the Science Council of Canada (assented to May 12, 1966), the Company of Young Canadians (assented to July 11, 1966) and the National Arts Centre Corporation (assented to July 15, 1966).

[^50]:    Atomic Energy of Canada Limited.-This Crown company was incorporated in February 1952 under the Atomic Energy Control Act, 1946 (RSC 1952, c. 11) to take over from the National Research Council on Apr. 1, 1952 the operation of the Chalk River project. The main activities of the company are (a) the development of economic nuclear power, (b) scientific research and development in the atomic energy field, (c) the operation of nuclear reactors and (d) the production of radioactive isotopes and associated equipment such as Cobalt-60 beam therapy units for the treatment of cancer. The company reports to Parliament through the Minister of Energy, Mines and Resources.

    Bank of Canada.-Legislation of 1934 (RSC 1952, c. 13) provided for the establishment of a central bank in Canada, the function of which is to regulate credit and currency, to control and protect the external value of the Canadian dollar and to stabilize the level of production, trade, prices and employment so far as may be possible within the scope of monetary action. The Bank acts as the fiscal agent of the Government of Canada, manages the public debt and has the sole right to issue notes for circulation in Canada. The Bank is managed by a Board of Directors sppointed by the Government and composed of a Governor, a Deputy Governor and 12 Directors; the Deputy Minister of Finance is also a member of the Board. The Bank reports to Parliament through the Minister of Finance and is governed by its own Act of incorporation. (See footnote, p. 142.)

[^51]:    * Compiled from information supplied by the reapective Departmenta,

[^52]:    - Staffed by employees of the National Fesearch Council.

[^53]:    －Prepared（June 1966）by the Department of External Affairs．

[^54]:    * Dual accreditation; representative not resident in the country.

[^55]:    - Dusl accreditation; representative not reaident in the country.

[^56]:    ${ }^{*}$ Dual accreditation; representative not resident in the country.

[^57]:    ${ }^{1}$ Estimated. Between inception of UNFICYP on Mar. 4, 1964 and Dec. 26, 1965, the net cost to Canada of its perticipation in the torce was $37,002,000$. Canads pays all costs of maintaining its contingent in Cyprus but reoovers from the UN the out-ol-pocket expenses of Cansdian personnel at UNFICYP headquarters. The figare cited does not include salaries and similar costs whirh Canada would have had to pay if the personnel had remaimed in Canada. In response to a request from the Secretary-General, Canada agreed on June 27, 1965 to make a voluntary contribution of $\$ 4,000,000$ to the UN to assist it in its current financial difteulties. ${ }^{3}$ Canada has paid in full its subscription to these organizations so that no payments were required in 1965; as a result of a reyiew of quotas it is expected that additional subseriptions will be made to the IBRD and IMF in 1966. 4 Of the commitment of $\$ 15,027,012$, which represents the first instalment of Canada's supplementary contribution to IDA, $\$ 13,274,518$ was drawn during 1965 and $\$ 2,500,000$ in January 1966. ©Canada withdrew from ICEM in 1962 but has continued to make an annual grant for the transportation of refugees.

[^58]:    *The terms of the Treaty and the organization of the Council and subordinate committees are dealt with in the 1954 Year Book at pp. 118-115. A short review of the events leading up to the establishment of NATO and its subsequent membership is given in the 1960 Year Book at p. 167.

[^59]:    *See also Appendir II.
    $\dagger$ See footnote on p. 183.

[^60]:    * An outline of growth in the 196t-66 period, based on the results of the 1966 Census, is included in Appendix II. An outline of the zrowth of population in Capada since the beginning of the seventeenth century may be found in Vol. I of the 1931 Census. Other accounts of population growth prior to the present century are included in Vol. I of the 1941 Census and Vol. X of the 1951 Census.

[^61]:    ${ }^{1}$ Excludes Newfoundland. $\quad 2$ Includes 35,416 half-breeds.

[^62]:    ${ }^{1}$ Excludes Newfoundland. ${ }^{2}$ Inchudes the Republic of Ireland. ${ }^{2}$ Includes Denmark, Iceland. Norway and Sweden. includes persons whose birthplace was not stated.

[^63]:    * A dwelling is defined as a structurally separate set of living quarters, with a private entrance either from outside the building or from a common hall, lobby, vestibule or atairway inside. The entrance must not be through another person's living quarters.

[^64]:    1 Exclusive of the Yukon and Northwest Territories.

[^65]:    * A family, as defined in the census, consists of a husband and wife (with or without children who have never married) or a parent with one or more children never married, living togetber in the asme dwelling. Adopted children and atepchildren are counted as own children and, in fact, a family may comprise a man or woman living with a guardiansbip child or ward under 21 years of age.

[^66]:    * Revised in the Information Services Diviaion, Department of Indian Affairs and Northern Development, Ottawa.

[^67]:    For footnotes, see end of table, p. 214.

[^68]:    For footnote, see end of table, p. 214.

[^69]:    For footnotes, see end of table, p. 214.

[^70]:    For footnotes, see end of table, p. 214.

[^71]:    1 Airican population based on sample survey.
    ${ }^{2}$ African population only.
    ${ }^{2}$ Fewer than 500 persons. Excluding Indian jungle population. ${ }^{5}$ Excluding nomadic Indian tribes.

    Excluding Indian and Negro population living in tribea. ${ }^{7}$ Excluding Kashmir-Jamrau, the final statue of which has mot yet been tetermined. $\quad$ Including 487 sq . miles demilitarized zone. ${ }^{2}$ Latest official estimate. 10 Less than one square mile.
    ${ }^{11}$ Latest official estimate; inhabited only in winter season; Norwegian population only-

[^72]:    * Sections 1 and 2 of this Part were revised under the direction of the Deputy Minister, Department of Manpower and Immigration, Ottawa. The history of immigration and the Immigration tet and Regulationg up to the mid1950s is dealt with in detail in a special article entitled "Developments in Canadian Immigration" appearing in the 1957-58 Year Book at pp. 154-176. Supplementing that material is an article on the "Integration of Postwar Immigrants" at pp. $176-1: 8$ of the 1959 edition.
    $\dagger$ At the time of writing (October 1966).

[^73]:    ${ }^{1}$ Exclodes Commonwealth conntries.

[^74]:    I Includes a few minor croupa.

[^75]:    - Includes deserting seamen deported.

[^76]:    * Prepared in the Citizenship Registration Branch under the direction of the Under Seoretary of Stato. Ottawa.

[^77]:    1 Represents only those cases reported to the Citizenship Branch by posts abroad.

[^78]:    ${ }^{1}$ Canadian-born persons who lost their citizensbip by marriage; this applies to females only.

[^79]:    ${ }^{1}$ Mainly children over 14 years of age.

[^80]:    * Revised in the Vital Statistics Section, Health and Wellare Division, Dominion Burean of Etatistics.

[^81]:    

[^82]:    ${ }^{1}$ Excludea Newtoundand for which data are not available.

[^83]:    *The term "illegitimate", as used here, does not refer to all births conceived out of wedlock but is necessarily restricted to those in which parents reported themselves as not having been married to each other at the time of
    birth or registration and in Ontario, to those in which the marital status of the mother was reported as "single" at the time of birth or registration.

[^84]:    - Obtainable from the Vital Statistics Section, DBS.
    $\dagger$ Stillbirth figures given bere refer only to foetuses of 28 or more weeke geatation which "showed no gign of life" Up to the end of 1963, only ioetuses delivered after at least 28 weeks pregnancy which showed no sign of life were required to be registered with the provincial authorities; as of Jan. 1,1964 , all provinces (except Newfoundland) provide for the conpulsory registration of all stillbirths of 20 or more weeks gestation, a 'stillbirth' being defined as "the complete expulsion or estraction from its mother, after at least 20 weeks pregnancy, of a product of conception in which, after such expulsion or extraction, there is no breathing, beating of the beart. pulaation of the umbitical cord. or unmiatakable movement of voluntary muscle'". Available data tor ctillbirths of $20-27$ weeks preanancy are not \&hown here but are obtainable from the Vital Statistice Section. DBS.

[^85]:    * For interational comparisons, bee Section 7, pp. 275-276.
    t A crude rate is one based on the cotal population.

[^86]:    1 Per 100,000 live births.

[^87]:    ${ }^{1}$ Prior to 1051 , includes deaths under one calendar month of age; since 1951, inoludes deaths under 28 days.

[^88]:    - For international comparisona, see Section 7, pp. 275-276.

[^89]:    *For international comparisons, see Section 7. pp. 275-276.

[^90]:    ${ }^{1}$ Includes 14 in Yukon Territory and five in the Nortbwest Terfitaries. ${ }^{2}$ Includes 13 in Yukon Territory and two in the Northwest Territories. $\quad$ Inciudes 24 in Yukon Territory and two in the Northwest Territories. $\quad 4$ Includes Bills of Divorce pessed by the House of Commons during the 1964-65 Session of Pariament. SIncludes 12 in Yukon Territory and sin in the Northwest Territories.

[^91]:    - Except where otherwise indicated, this Chapter was prepared (July 1966) by the Research and Statistics Division of the Department of National Health and Wellare, Ottawa.

[^92]:    ${ }^{1}$ Amounts as set out in the Orders in Council. $\quad 2$ Merged with Medical Rebabilitation Grant, Apr. 1, 1980
    ${ }^{2}$ Absorbed into General Public Health Grant, Apr. 1, 1960.

    - Lapsed in $1953 . \quad{ }^{5}$ Introduced in 1953 and absorbed into General Public Health Grant, Apr. 1, 1960. $\quad$ Introduced in 1953 and merged with Cripped Children Grant, Apr, 1, 1960 . ${ }^{2}$ Amounts for $1990-66$ only; see footnotes ${ }^{2}$ and $6 .{ }^{2}$ Introduced in 1953. $\quad$ "Amount available" inclades, but "amount expended" excludes, an estimated amount of $\$ 9,500,000$ that representa Quebec entitlement under the Fstablished Programs (Inteina Arrangements) Act.

[^93]:    * Hospital insurance is financed in the following ways: (1) general revenues only-Quebec, Newfoundland, Prince Edward Island, New Brunswick, Yukon Territory and the Federal Government: (2) general revenues plus a daily charge at time of service-British Columbia, Alberta and the Northwest Territories; (3) sales tar onlyNova Scotia; (4) premiums, sales tax and other general revenues-Saskatchewan; and (5) premiums, with subsidies from general revenues-Ontario and Manitoba.
    $\dagger$ Since Jan. 1, 1965, payments no longer have been made by the Federal Government to the Province of Quebec under the hospital insurance program, the Gnancial arrangements having been transferred to a aystem of tax abatement.

[^94]:    ( Per 1,000 population: based on intercensal population estimates as at June 1, 1964.

[^95]:    For footnotes, see end of table, p. 284.

[^96]:    ${ }^{1}$ Includes fuel, electricity, water, insurance, replacements of bedding and linen, laundry supplies, housekeeping supplies, repairs to buildings, furniture and equipment, maintenance of physical plant, and office supplies and serv${ }_{2}$ Includes other revenue fund expense (mainly items such as interest, depreciation and rent) that do not relate to particular departments of the hospital. Based on patient-days during year for adults and children, excluding newborn.

    - Based on intercensal population estimates as at June 1, 1964.

[^97]:    * See Chapter XVIII, Section 1, Subsection 2, for provincial labour legislation.

[^98]:    * Prepared in the Institutions Section of the Health and Weliare Division, Dominion Bureau of Statistics Detailed information will be found in the following DBS publications: Hospital Statistics, Vols. I to VII (Catalogue Nos. 83-210 to 83-216); Mental Health Statistics, Vol. II (Catalogue No. 83-205); Tuberculosis Statistics, I'ol. II (Catalogue No. 83-207); and List of Canadian Hospitals and Related Institutions and Facilities (Catalogue No. 88-201).

[^99]:    I Mental hospitals only; exclusive of psychiatric units in other hospitals. does not include tuberculosis anits in other hoppitals.

[^100]:    ${ }^{1}$ Adults and children. $\quad 2$ Population estimstes as at June 1. - Mental bospitals only: does not include psychiatric units in other hospitals.
    ${ }^{2}$ Based on rated bed eapacity. does not include taberculosis units in other hospitals.

[^101]:    1 Mental hospitals only; exclusive of paychiatric units in other hospitals.
    ${ }^{2}$ Tuberculosis hospitals only:
    oxclusive of tuberculoais units in other bospitale.

[^102]:    ${ }^{1}$ Includes venereal diseases only for the Northwest Territories type not specified.
    ${ }^{3}$ Less than 0.05 per 100,000 population.

[^103]:    1 Not reportable. EIncludes other cases where type not specified.
    ${ }^{3}$ Less than 0.05 per 100,000

[^104]:    ${ }^{1}$ Includes ail parts of census metropolitan areas, regardleas of size.
    ${ }^{3}$ Size of place as in 1950 Census.
    +Size of place as in 1981 Censumas.

[^105]:    I Includes incidental wages and salaries.
    ${ }_{2}$ Includes the aalaries of Cottage Hospital Medical Plan doctors.

[^106]:    * A contributor, a widow or a widower is considered disabled ir he or she has a phyaical or mental disability so severe and likely to continue so long that he cannot get atasdy work.

[^107]:    *See footnote, p. 310.

[^108]:    ${ }^{1}$ Includes dependants. $\quad 2$ Payment figures shown are for the months to which the clajms made under the program relate and include amounts paid to the provinces by the Federal Government after the end of the Giscal year.

[^109]:    * See also pp. 171-176.

[^110]:    ${ }^{3}$ Estimated.

[^111]:    * Prepared by the Department of Veterans Affairs, Ottawa.

[^112]:    * Prepared in the Education Division, Dominion Bureau of Statistics.

[^113]:    ${ }^{1}$ Includes publicty controlled, private and lederal schools.
    ${ }^{2}$ From kindergarten to and including grade 8 in all provinces except Quebec: prade 8 included with seenndary gradea in Quebec.
    ${ }^{2}$ Includes preliminary figurea for Quebec. $\quad 4$ Includea 1,259 pupils not classifisble by grade.

[^114]:    ${ }^{1}$ Day，residential and boepital schools administered by the Federal Government．${ }^{2}$ Also included with＂Higher Education＂．${ }^{2}$ Under Programs 3．4，5， 6 and 8 of the Federal－Provincial Agreement，for fiscal year 1963－64．Includes indentared apprentices tsking full－time，part－time and correspondence conrses． ${ }^{5}$ Included with Nova Scotia． teacher－training institutions and Federal Government departments not distributed by province．

[^115]:    ${ }^{1}$ Includes the Yukon and Northwest Territories．
    ${ }^{2}$ Capital grants from the Federal Government are included in above items．Fimited to reported expenditures of pablic funds．
    －Includes eapital costo from current funds．

[^116]:    I Before 1949, Newfoundland was considered as being a country outside Canada.
    : Data from the Institute of International Education, New York. ${ }^{3}$ Data from the Association of Cotnmonwealth Universities, London, England. Newfoundland is included with Canada for all years.

[^117]:    ${ }^{1}$ Includes Bachelors of Letters and Social Science.

[^118]:    1 See text on p. 361 re Quebec.

[^119]:    ${ }^{1}$ Eincolments of fall-time students uader the various programs of the federal-provincial agreements (see p. 347). 2 Excludes 2,473 full-time students in one-year preparatory courses at institutes of technology.
    f As at Mar. 31, 1964. ${ }_{149}$ Includes students from other Atlantic Provinces. ${ }^{5}$ Excludes 5,116 part-time students and 149 atudents taking formal spprenticeship courses by correspondence. Excludes 17.048 part-time students and students taking correapondence courses from private trade achoola and business schools.
    21,000 part-time atudents and about $\mathbf{3 , 1 0 0}$ students taking correspondence courses.

[^120]:    * Further information on this subject may be obtained from the Canadian Caltural Information Centre, 56 Sparks St., Ottawa.

[^121]:    Association of Canadian Industrial Designers
    National Design Council
    Canadian Conference of the Arts
    Canadian Craftsmens Association
    Canadian Society for Education through Art
    Canadian Group of Painters
    Canadian Guild of Potters
    Canadian Handicrafts Guild
    Canadian Museums Association
    Canadian Society of Graphic Art
    Canadian Society of Painter-Etchers and Engravers
    Canadian Society of Painters in Water Colour
    Canadian Society of Landscape Architects
    Federation of Canadian Woodcarvers
    Royal Canadian Academy of Arts
    Royal Architectural Institute of Canada
    Sculptors' Society of Canada
    Town Planning Institute of Canada
    Canadian Centre for Films on Art
    Community Planning Association of Canada.

[^122]:    ${ }^{-}$Prepared by Dr. A. W. Banfield, Dírector, Natural History Branch, and Dr. R. Glover, Director, Human History Branch, National Museum of Canada, Ottawa.

[^123]:    * A list of 400 selected titles of "Books About Canads", prepared by the National Library, appears in Chapter XXVII of this volume.

[^124]:    t Full-time and equivalent.

[^125]:    ${ }^{1}$ In addition, there were 69 graduates in 1965 and 50 graduates in 1964 who did not report detailed information.

[^126]:    * A Selection of Canadian Acbie vements in Science and Technology, 1800-1964, compiled by Dr. John R. Kohr of the National Research Council, Ottawa, appears in the 1965 Canada Year Book, pp. 398-401. This is available in reprint form from the Dominion Bureau of Statistics, Ottawa.

[^127]:    * Revised by Joan Powers, Public Relationg Office, National Research Council of Canada, Ottawa.

[^128]:    *Prepared (June 1966) by Dr. W. B. Lewis, Senior Fioe-President (Science), Atomic Energy of Canada Limited, Chalk River, Ont.

[^129]:    ${ }^{2}$ NRX is ebentially duplicated in the Canada. India Reactor, near Bombsy, India, which started up in 1960.
    : CANDU-PHW standa for "Canadian Deuterium Uranium-Pressurized Heavy Water' ${ }^{\prime}$ The CANDU-PHW-200 design is also employed in the Rajasthan Atomic Power Plant in India, acheduled to start up in 1969 .

[^130]:    * Prepared (Jupe 1960) by C. Collins, Division of Pure Phyaics, National Reaearch Council of Canada, Ottawa.

[^131]:    * Prepared by Dr. G. D. Garland, Geophysics Laboratory, University of Toronto, Toronto.

[^132]:    * Prepared by Dr. Ian Halliday of the Domanion Observatory, Ottawa.

[^133]:    *See also p. 382.

[^134]:    * In the case of scholarships and fellowships, only those awards (about 75) made to students pursuing their studies at Canadian universities and colleges are included. Many of the close to 100 grantg-in-aid of research were paid to defray expensea involved in travel and atudy abroad but, as the granteea were generally staff members of Canadian universities. these sums are included in the total.

[^135]:    1 Estimated.
    ${ }^{2}$ Revised to include the Water Resources Bradch, which, until 1980, was part of the former Department of Northern Affairs and National Resources.

[^136]:    1 Estimated. s Revised to include the Water Resolzces Branch, which, until 1966, was part of the former

[^137]:    ${ }^{1}$ Estimated.

[^138]:    I Estimated.

[^139]:    * Except as otherwise credited, this Chapter has been revised in the Judicial Section, Health and Wellare Division, Dominion Bureau of Statistics.
    $\dagger$ Prepared by the Criminal Law Section, Department of Justice, Ottawa.

[^140]:    *Salmond on Jurisprudence, 7th Edition, p. 496.

[^141]:    " 1 . It is hereby recognized and declared that in Canada there have existed and shall continue to exist without discrimination by reason of race, national origin, colour, religion or sex, the following human rights and fundamental freedoms, namely,
    (a) the right of the individual to life, liberty, security of the person and enjoyment of property, and the rigbt not to be deprived tbereof except by due process of law;
    (b) the right of the individual to equality before the law and the protection of the law;
    (c) freedom of religion;
    (d) freedom of speech;
    (e) freedom of assembly and association; and
    $(j)$ freedom of the press."

[^142]:    1 Includes abortion, indecent assault on female, sexual intercourse and attempt, inceot, procuring, rape, attempted rape and seduction. $\quad 2$ Includes causing death in the operation of a motor vehicle or otherwise.

[^143]:    * Prepared under the direction of A. J. MacLeod, Commisaioner of Penitentiaries, Ottawa.

[^144]:    *Prepared by T. G. Street, Chairman, National Parole Board, Ottawa.

[^145]:    ${ }^{1}$ Includes civilians paid by municipalities．

[^146]:    ${ }^{1}$ Not available, included with males.

[^147]:    * Prepared by D. F. Symington, Staff Congultant to the Canadian Council of Resource Ministers.

[^148]:    : Less than half a square mile.

[^149]:    * Prepared (July 1966) under the direction of S. C. Barry, Deputy Minigter of Agriculture, Ottawa.

[^150]:    ${ }^{1}$ Includes 3, 951 tons of rye deatined for Quebec. $\quad 3$ Includes 10,873 tons of rye destined for Ontario. cludes 1,199 tons of sample feed grain, 96 tons of rye and 623 tons of corn destined for British Columbia. footpotes ${ }^{2,2}$ and ${ }^{3}$.

    5 Includes 819 tons of sample feed grsin, 978 tons of rye and 392 tons of corn.
    fn-

[^151]:    * Information supplied by the agricultural authorities of the various provincee.

[^152]:    *Revised in the Agriculture Division, Dominion Bureau of Statistica.

[^153]:    * Payments to farmers under the provisions of the Prairie Farm Assistance Act are made from the Prairie Farm Emergency Fund to which farmers contribute by means of a 1-p.c. levy on grain marketings.

[^154]:    * The supply and disposition of the major Canadian grains is dealt with in Chapter XXI, Part I, Sect. 2, under the heading of "The Grain Trade, 1964-65"

[^155]:    ${ }^{1}$ Grose value of farm production; does not represent cash income from sales.
    2 Not available at time of going to press; will be published in one of the regularly sebeduled crop reports and in the Quarterly Bulletin of Agricultural Stotistica (Catalogue No. 2t-003).

[^156]:    I Values for 1965 not available at time of going to press; see footnote ${ }^{2}$, Table 8.
    ${ }^{2}$ Fewer than 500 acrea.

[^157]:    ${ }^{1}$ Cowe and heifers, two years old or over, kept for milk parposes.

[^158]:    I Used in farm butter only.

[^159]:    ${ }^{1}$ Factory-made cheese includes cheddar and other cheese made from whole milk and cream.
    ${ }^{2}$ Amounta for "other cheese" are included in Quebec, Ontario and Alberta fieures but, as fewer than three firms reported in the otber provinces, data cannot be included except in the Canads total.

    Concentrated milk products, which comprise a large group of both whole milk and skim milk products, are moving in opposite utilization trends. The amount of milk going into whole milk products-evaporated milk, dry whole milk, partly skimmed concentrated products, etc.-is decreasing; milk used for these products amounted to $984,000,000 \mathrm{lb}$.

[^160]:    ${ }^{1}$ Includes malted milk, cream powder, formula milks, whole milk powder of less than 26 -p.c. fat, evaporated milk of 2 -p.c. fat and concentrated liquid milk manufactured by fewer than three firms. ${ }^{2}$ Includes sugar of milk (lactose), condensed buttermilk, concentrated liquid skim milk lactalbumin and special formula skim milk products manufactured by fewer than three firms.

[^161]:    ${ }^{1}$ Iveludes Newfoundland for all manufactured dairy products.
    ${ }^{2}$ Includea, in addition to the items listed, malted milk, cream powder, partly sikimmed evaporated milk, whole milk powder of less than $26-\mathrm{p} . \mathrm{c}$. fat, formula milks, evaporated milk of 2-p.c. fat, and concentrated liquid milk.
    ${ }^{3}$ Includes milk by-produet items not listed, i.e., condensed buttermilk, powdered buttermilk, sugar of milk, casein, powdered whey, special formula akim mili products, lactalbumin and concentrated liquid skim milk. Since the quantities used for buman consumption and livestock feeding cannot be separated, per capita figures incfude both.

    - Includes ice cream mix in terms of milk.

[^162]:    1 Prior to 1960, acreages of peas in Prince Edyward Island and New Bronswick are included with Nova Scotia; in 1960. 1861 , 1962 and 1963. Prince Edward Ialand and Nova Scotis sereages of peas are included with New Brunswick. A Acreages of beans, corn and peas in Manitoba are included with Alberta.

[^163]:    I Includes Prince Edward Island for 1965.
    ${ }^{2}$ Estimates apply only to that portion of the crop grown ior processing in all provinces for which eatimates are made except British Columbia,

[^164]:    ${ }^{1}$ Total laid leas loss.

[^165]:    1 Includes Agricultural Stabilization Act payments of 22 cepts per $1 \mathbf{b}$. in $1961,18.26$ cents per 1b. in $1962,14.3$ oents per lb . in 1963 , 12.3 cents per lb . in 1964 and 18.3 cents per lb . in 1965 on qualifying graded wool. 2 See text above.

[^166]:    ${ }^{1}$ Included in Nova Scotia. Included in Saskatohewan.
    ${ }^{2}$ Total area of elass and value of vegetable sales for Britigh Columbia not comparable with data for previous years.

[^167]:    ${ }^{1}$ No sales reported.

[^168]:    ${ }^{1}$ Includes field, vegetable, fruit and nursery crop land.

[^169]:    I Estimated totals, which in the case of production are rounded to millions, include allowances for any missing data for countries shown and for other producing countries not shown. production estimates.

[^170]:    *Sentions of this Chapter that deal with forest resources and depletion and the federal foreatry program were revised by the Department of Forestry and Rural Development, Ottawa. Provincial forestry programs were prepared by the forestry officials of the respective provincial governments. Sections dealing with foreat and allied industries, except as otherwise noted, were ravised in the Forestry Section, Industry Division, Dominion Bureat of Statistics.
    $\dagger$ A more detailed diacuasion of forest regions is given in Bulletin 123, Forest Regions of Canada, publighed by the Department of Forestry and Rural Development.

[^171]:    ${ }^{1}$ Ten inches D.B.H. or over (suitable for saw timber).
    ${ }^{2}$ Four to nine inclaes (units of $85 \mathrm{cu} . \mathrm{ft}^{\text {. ) }}$

[^172]:    * Prepared by Jobn W. Ker, Professor of Forestry, University of New Brunswick; reproduced courtesy Timber. jack Machines Limited. The dominant species existing in each forest region are given on pp. $508-510$ and detalled information is contained in Departiment of Forestry and Rural Development Bulletin No. 61, Native Treas of Canado.

[^173]:    ${ }^{1}$ Not reported.
    2 Included in provincial figures.

[^174]:    1 In eatimating the annual cut, certain factors have been used to convert commercial units to cubic feet. The factor for logs and bolts for the Britist Columbia coastal region is 175 cu . ft. per M ft. b.m. logscale and for the remainder of Canads 200; the factor ior rough pulpwood and round mining timber is 85 , for fuelwood and wood for charcoal 80, fence posta 1.2 and fence rails 1.

[^175]:    ${ }_{1}$ Prince Edward Ieland is the only province in which there is no production.

[^176]:    ${ }^{2}$ Figure differ alightly from DBS figures given in Tablea 14 and 15 becouse of different basea of calculation.

[^177]:    *The Department of Forestry and Rural Development includes, under the administration of a separate Assistant Deputy Minister, $s$ division responsible for rural development under authority of the Agricultural and Rural Development Act (ARDA) and the Maritime Marshland Rebabilitation Act, described at pp. 445-447; the administration of the Feed Grain Assistance Regulations, described at p. 462, is also a responsibility of the Department.

[^178]:    * Prepared by B. W. Burgess, Secretary, Pulp and Paper Research Ingtitute of Canada, Montreal, Que.

[^179]:    * Prepared under the direction of Dr. C. M. Isbister, Deputy Minister of the Department of Energy, Mines and Resources, Ottawa, in the following Divisions: Introduction and Subsections 1 and 3 by the Mineral Resources Division; Subsection 2 by the Mineral Proeessing Division, Mines Branch; and Subsection 4 by the Fuels and Mining Practice Division, Mines Branch. The statistical tables included throughout the Chapter were prepared in the Industry Division of the Dominion Bureau of Statistice. Figures for 1965 (except thoge for coal) are preliminary.

[^180]:    'Value of Newfoundland production included from 1949.

[^181]:    * For a description of this index, as well as one for manulacturing and electric power and gas utilities, see DBS Reference Paper Revised Inder of Indxstrial Production, 1995-1957 (1949=100) (Catalogue No. 61-502). To update these series and others in the Index of Industrial Production, see DBS monthly report Indsx of Industrial Preductios (1949=100) (Catalogue No. 61-005).

[^182]:    ${ }^{1}$ Includes minor items not specified.

[^183]:    I Figares for 1956 include radium salts, silver, cobalt and uranium oxides; figures for $1957-65$ are for uranium oride ( $\mathrm{O}_{5} \mathrm{O}_{8}$ ).

[^184]:    ${ }^{1}$ Recovered from sour natural gas and nickel sulphide ores. zine sulphide concentrates at Arvida and Port Maitland. iron residue or sinter.

[^185]:    ${ }^{1}$ Standard portland cement. other than white.

[^186]:    *This Subsection contains final 1965 fizures for coal which do not quite agree with the preliminary figures given in the introductory write-ap to Section 1 .

[^187]:    ${ }^{1}$ The sum of Canadian coal mines' sales, colliery consumption, cosl supplied to employees and coal used in making coke, eto., less the tonage of coal exported. ${ }^{2}$ Imports of briquettes are not included in this table but are shown eeparately in Table 32. ${ }^{32}$. Deductions have been made from this column to take account of foreign coal reexported from Canada; bituminous coal ex-warehoused for ships' stores was deducted for the years prios to 1064.

[^188]:    *Reviged under the direction of Hon. J. Watson MacNanght, Chairman of the Dominion Cosl Board, Ottawa.

[^189]:    * Compiled from material supplied by the respective provincial governments.

[^190]:    ${ }^{1}$ Exports. ${ }^{2}$ Excludes Northern Ireland. ${ }^{2}$ DBS figures. Jointly shared by Saudi Arabia
    and Euwait. $\quad$ Includes Papua.

[^191]:    *Sections 1. 2 and Subsection I of Section 3 were prepared by the Information and Cousumer Service, Department of Fisheries, Ottawa.

[^192]:    ${ }^{1}$ Includes halibut landed in United States porta. Territory.

[^193]:    1 Ibcludes value of livers and liver products.

[^194]:    *Propared by the respective provincial departmente reaponsible for fisheries administration.

[^195]:    *Prepared by A. Stewart, Production and Marketing Branch, Canada Department of Agrieultare, Ottawa.

[^196]:    - Prepared by the Agricalture Division, Dominion Burean of Statistics.

[^197]:    ${ }^{2}$ Totals include pelts and their values not allocated to a province or territory, mainly Alaska fur seal and Atlantic Coast hair beal.

[^198]:    t Commonly known as Alaaka fur seal; not available by providce. Value figures are the net returns to the Federal Government for pelte mold.
    \& Value figures are payments to sealers for landed pelts, including blubber; an unknown quantity is processed as leather.

[^199]:    *Seotions 1 and 2 of this Chapter were prepared by the Water Resourcea Branch, Department of Enercy. Mines and Resources, Ottawa: Sections 3 and 4 were revised by the Energy Statiatics Section, Indnstry Division, Domainion Bureau of Statiaticy, and Section 5 by the various provincial Commisaions concerned.

[^200]:    *Sales to industrial establishments with generating facilities are included in 1963 but excluded in 1964; in the later year they amounted to $14,666,303,000 \mathrm{kwh}$.

[^201]:    t Figures for 1963 include industrial establishments that purchase power and have generating lacilities; 1864 Gguree exclude such establishments of which there were 122 in that year. ${ }^{2}$ Figures for 1963 include revenue from sales to industrial eatablishments with generating facilities; 1964 figures exclude such revenue which amounted to $\$ 86,475,000$ in that year. ${ }^{3}$ Includes $22,304,000 \mathrm{kwh}$. of 'no value' energy. of 'no value' energy.

[^202]:    ${ }^{1}$ Of this amount, $22,194,983,000 \mathrm{kwh}$. was generated lor use within own plant and the remainder sold to ultimate customers; excludes amount received from tuilities. $\quad$ Excludes sales to industrial establizhments witt generating facilities, totalling $14,666,303,000 \mathrm{kwh}$. ${ }^{2}$ Excludes industrial establishments that purchase power and that have generating facilities. amounting to $\$ 88,475,000$.

[^203]:    ${ }^{1}$ Hydro unless otherwise noted.

[^204]:    I Sum of the maximum 20-minute coincident peak loads (primary phos secondary) of each of the systems operated by the Commission, given in terms of net output of the sources of supply to each system for the last month of each fiscal year.

[^205]:    * Sections 1 to 4 were prepared in the Manufacturing and Primary Industries Division, Dominion Bureau of Statistics, and Section 5 in the Information Division, Department of Industry, Ottawa.

[^206]:    ${ }^{1}$ Based on monthly ample survey of the labour force; employment reported by manufacturers would represent a somewhat smaller percentage of total employment for a combination of reasong. Statistics for 1961 and later years are not wholly comparable with earlier periods shown.

[^207]:    *Tbese indexes are publighed in DBS periodical Industrial Production Inder (Catalogue No. 61-005) and are based on the 1948 standard industrial classification; they will later be converted to the revised (1960) standard industrial clasgification, thus making them comparable with currently issued dollar and employment data for manufacturing induatries.
    $\dagger$ Estimates of constant dollar volume of output, as such, are not prepared, so that this is an indirect method of studying changes in the induatrial structure of manufacturing.

[^208]:    * Industries in whioh growth rate exceeded the average for all manufacturing.

[^209]:    * Industries in which growth rate exceeded the average for all manufacturing.
    $\dagger$ Industries in which growth rate exceeded that of population but fell below the average for al manufacturing.

[^210]:    *These growth rates are derived from data of the External Trade Division of the DBS (see Chapter X XII on Foreign Trade).
    $\dagger$ The classes shown are approximately equivalent to exporta of manufactured goods.

[^211]:    * Average annual percentage rates of change have been calculated by the least squares of logarithms method. For certain annual Census of Manufactures data, the series were "spliced" to adjust them for certain discontinuities beiore carrying out the computations.
    $\dagger$ DBS publication Inventories, Shipments ond Orders in the Manufacturing Industries (Catalogue No. 31-001),

[^212]:    ${ }^{1}$ Conceptually identical to previous years.
    ${ }^{2}$ Cannot be reported separately for manufacturing and non-manufacturing activities but related substantially to manulacturing activity. $\quad$ Includes production facturing activity.

    Incitudes production
    ational revenue less to fhipments and other operational revenu

    5 Confidential. ( Incorporates revised basis of valuation for amelting and refining.

[^213]:    1 Conoeptually identical to previons years.
    facturing activity. Includes produrction
    2 Cannot be reported separately for manufacturing and non-manufacturing activities brit related sobstantially to manu-
    related workers, administrative and office employees, asales, distribution and other employees. facturing activity, I Includes production and related workers, administrative and office employees, askes, distribution and other employeen.
    ${ }^{1}$ Includes production djusted for inventory changes where required

    Confidential
    Futp and paper mills only; publication of these figures was authorized by the firms concerned. Incorporates revised basis of valuation for amelting and refining.

[^214]:    * As defined for the 1961 Census of Population; see DBS publication 1961 Census of Canada-Population: Incorporated Cities, Towns and Villages (Catalogue No. 92-535). These areas are in some cases substantially larger than metropolitan areas defined for other purposes.

[^215]:    1 Includes working owners and partners.

[^216]:    * Except where otherwise noted, prepared in the Business Finance Division, Dominion Bureau of Statistics.
    $\dagger$ Capital expenditure fgures for 1864 and earlier years are final and those for 1965 are preliminary and subject to revision at a later date. Capital expenditures for 1964 and 1965 , as well as intentions for 1966, appear in greater detail in the publication Private and Public Investment in Canada, Outlook 1966, available from the Queen's Printer (Catalogue No. 81-205).

[^217]:    1 Work done by the labour forces of utilities, manufacturing, mining and logging firms and by government

[^218]:    1 Although thig ia a metropolitan area, only St. Jobo's proper is included in the building permits survey.

[^219]:    'As reported by employera with 15 or more employees.

[^220]:    * Prepared (November 1966) in the Information Division, Central Mortgage and Housing Corporation, Ottawa. Amendmente to the National Hoasing Act made by SC 1966, c. 53, which received Royal Assent on Nov. 22, 1966, are not included in this preaentation; eee Chap. XXVII, Part $V_{i}$ listing federal legialation of 1966-67.

[^221]:    I Excludes the Yukon and Northwest Territories.

[^222]:    * More detailed information masy be found in Vol. II (Part 2) of the 1961 Census (Catalogue Nog. 93-523 to 93-535).
    $\dagger$ Based on a 20 -p.c. sample of occupied dwellings across Canada. A dwelling, for census purposes, is a atructurally aeparate set of living quarters with a private entrance either from outside the building or from s common hall or stairway inside. The entrance must not be through anyone else's living quarters.

[^223]:    1 Exclusive of the Yukon and Northwest Territories. exceeded the number of rooms. ${ }^{2}$ Figures relate to owner- Dwellings in which the number of persons only. Figures relate to non-farm dwellings only.

[^224]:    *Except as otherwise noted, this Chapter has been revised onder the direction of the Deputy Minister of the Departmelt of Labour. Ottawa.

[^225]:    * Prepared from information provided by the Information Serviee, Departenent of Manpower and Immigration.

[^226]:    *Statistics on numbers and earnings of prevailing rate and other groups of federal employees which were exempt from the Civil Service Act are given at pp. 156-161; this Act was replaced by the Public Service Employeea Act (BC 1960-67, c. 71) passed by the House of Commons Feb. 20, 1967, the proviaions of which ere extended to cover prevailing rate employees and shipa' officers and crewe.

[^227]:    ${ }^{1} 40$ hours in shops.
    ${ }^{2}$ In hotels and restauranta the rates apply to a maximum of 54 boura in a week. 1 In beauty parlours, theatres and a musement places the rates apply to A marimum of 44 hours in a week. cents per bour for male workers in food processing plants. ${ }^{\circ}$ Chapuffeurs, watchmen, stationary enginemen and firemen 70 centa; bell boys 58 cents. ${ }^{3}$ Dollars per week.

[^228]:    *Prepared in the Special Surveys Division, Dominion Bureau of Statiatics.

[^229]:    * A comprehensive description of the survey is given in DBS publication Canadian Labour Force Survey-Metiodology (Catalogue No. 71-504).

[^230]:    1 Excludes Newtoundland.

[^231]:    ${ }^{1}$ Includes commercial and financial occupations.
    ${ }^{2}$ Excludes Newioundland. ing to the 1951 occupational classification, using 1961 occupational classification terminology. ${ }^{4}$ Classified according to the 1961 occupational classification. ${ }^{5}$ Includes manufacturing and mechanical and construction occupations.

[^232]:    * Prepared in the Employment Section, Labour Division, Dominion Bureau of Statistics.

[^233]:    ${ }^{1}$ Consists mainly of hotels, restsurants, laundries, dry-cleaning establishmenta and recreational and business oervices.

[^234]:    ${ }^{1}$ Durable goods manufacturing includes wood products, furniture and fixtures, primary metal industries, metal fabricating industries, machinery (except electrical), transportation equipment, electrical products, and non-metallic mineral products. Non-durable goods manufacturing includes all other manufacturing industries.

[^235]:    I Mainly hotels, restuarante, laundries, dry-cleaning establighmentes and recreational and businese eervices.

[^236]:    1 Durable goods manufacturing includes wood products, furniture and fixtures. primary matal industries. metal fabricating industries, machinery (ercept electrical), transportation equipment, electrical products and non-metallic mineral prodncts; non-durable gooda manufacturing includes all other manufacturing industries.

[^237]:    - More detailed information is given in DBS annual report Eornings and Hourz of Work in Manufocturing (Catalogue No. 72-204).

[^238]:    *More detailed informstion in given in DBS monthly publicstion Estimates of Employees by Province and Industry (Catalogue No. 72-008).

[^239]:    1 Includes health services (except haspitals); motion picture and recreational services; services to businesa management; personal services (ercept domeatic service); and miscellaneous ter vices.

[^240]:    1 "Other Industries" consista of logging; mining; transportation (all sectors including air transportation), etorage and communication (including radio and TV); public utilities; trade; finance; and government and personal service.

[^241]:    * Prepared by the Unemployment Insurance and Pensions Sention, Labour Division, Dominion Bureau of Statistics; statistics of unemployment insurance are compiled and publisbed by the DBS from material supplied by the Unemployment Insurance Commisaion.

[^242]:    - Copies of the 1955 Act incorporsting subsequent amendments are available from the Queen's Printer, Ottaws (Catalogue No. YX92-222/50).
    $\dagger$ Commencing Apr. 1, 1957, coverage was extended to pergons engaged in fishing, notwithstanding the fact that such persons are not employees of any other person but are ugually selfemployed; commencing Apr. 1, 1967, coverage is axtended to employees engaged in agriculture and horticalture.

[^243]:    *Thia list should not be considered eshaustive; more detail may be obtained from the Dnemployment Insurance Act and Regulations.

    2s.-Regular Benefit Periods Terminated, Duration and Average Amount of Benefit Paid, by Province, 1964 and 1965

[^244]:    * More detailed informatiot is given in the Department of Labour publication Workmen's Compensation in Canada, A Comparison of Provincial Laws.

[^245]:    1 Injuries requiring medical treatment but not chusing disability for a sufficient period to qualify for compensation; the period varies in the several provinces.
    ${ }^{2}$ Includes, except where noted otherwise, payments to compensate loss of earnings. medical aid payments, cost of rebabilitation and hospitalization (not including capital expenditures) and pensions paid (not pensions awarded) for temporary and permanent disabilities. ${ }_{3}$ Excludes payments by employers who wake direct compensation to their employees; such employees come under Schedule I of the Ontario and Quebec Workmen's Compensation Acts.

[^246]:    * Prepared by Dr. Eugene Forsey, Director of Reasarch, Canadian Labour Congress, Ottawa.

[^247]:    1 Figures for years up to and including 1949 are as at Dec. 31 ; figures from 1051 are as at Jan. 1. I Newfoundland included Irom 1849 . Adjustment in coverage resulted in an net addition of approimately 23,000 members.

    - Includes an addition of approximately 7,000 members resulting from improved coverage.

[^248]:    *The Board's judgments are reported in Canadian Railway Cases and Canadian Railway and Transpart Cases, and ita judgraents, orders, rulings and regulations are published by the Queen's Printer, Ottawa, in what is known as J.O.R. \& R.

[^249]:    *The statictical data in this Part were revised in the Trangportation Division, Dominion Burestu of Statiotics; more detailed information is given in the annusl reports of the Division.
    $\dagger$ A special article on operational and teohnological ohangea in rail transport appears in the 1965 Year Book at pp. 755-761.

[^250]:    * Statiatice for individual railways are given in DBS annual report Railway Transport, Part III (Catalogue No. 52-209).

[^251]:    ${ }^{1}$ Defined as a single track extending the entire distance between terminals, upon which the length of the road is based. $\quad 2$ Newfoundland included from 1950 61 miles in 1963, 58 miles in 1964 and 55 miles in 1965.

[^252]:    ${ }^{1}$ Road Ireight units. $\quad{ }^{2}$ Includes those of non-rail industrial firms such as oil, chemical and railvay car easing companiea which furnish freigbt cars to, or on behali of, any railway line.

[^253]:    1 Includes expreag, brggage, mail and other cara. miles but ercludes miles msde in passenger and non-revenue trains. one railway; see Table 4 for details of ireight carried.

[^254]:    *Statistics for individual railways are given in DBS annual report Railwoy Transport, published in six Parts (Catalogue Nos. 52-207-52-212) ; details on capital lisbility are given in Part II (Catalogue No. 52-208).

[^255]:    ${ }^{2}$ Includea employees engaged in communications, express cartage, highway transport (rail) and outside operations. 2 See text above.

[^256]:    *The Hudson Bay Railway, formerly managed and operated for the Federsl Government by tbe CNR, was absorbed into the Canadian National Railway System on Jan. 1, 1958, to be operated in the same manner as other Canadian Government railway lines. Statistics of the Hudson Bay Railway are therefore included with CNR data for 1958 and anbsequent years.

[^257]:    ${ }^{1}$ Over railways, boat lines, motor carrier and aircraft routes. $\quad$ : Includes tax accruala. : Amounta paid by exprese companie to the carriers, i.e., railways, steamship lines, etc., for transporting expreas matter. - Eicludes airline mileages of the Railway Epreas Agency.

[^258]:    Norv.-It is obviounly impossible to include here the great mass of detailed regulations in force in each prov. ince and tertitory; only the more important general in'ormation is gives. The source of information for detailed regulations for each province and territory is given at pp. 803-804.

    The registration of motor vehicles and the regulation of motor vehicle traffic lies within the legislative jurisdiction of the provincial and territorial governments. Regulations common to all provinces and territories are summarized as follows.

    Operators' Licences.-The operator of a motor vebicle must be over a specified age, usually 16 years ( 17 in Newfoundland and 18 for class A licence in Alberta), and must carry a licence, obtainable in most provinces only after prescribed qualification tests. Such

    * Except as otherwise indicated, the material in this Part has been revised in the Transportation Division, Dominion Bureau of Statistics.
    $\dagger$ Revised according to information received from the respective provincial authorities concerned,

[^259]:    7 Included with trucks.

[^260]:    For footnotes, see end of table, p. 810.

[^261]:    1 The marked decrease in this figure is attributable to the elimination of $125,000,000 \mathrm{gal}$. of liquefied petroleum zases used for domestic and industrial heating and power. Net sales are not affected by this cbange.

[^262]:    * Statigtics are given in more detail in DBS annual report Motor Carriers-Preight, Part I (Catalogue No. 53-222) and Part II (Catalogue No. 53-223).

[^263]:    * Statistics are given in more detail in DBS annual report Moning and Storage, Household Goods (Catalogue No. 53-221).
    $\dagger$ Statistics are given in more detail in DBS annual report Passenger Bus Statistics (Catalogue No. 53-215).

[^264]:    * Statiatica are given in more detail in DBS annual reports Motor Transport Traffic for Canads and the provinces (Catslogte Nos. 58-207-58-214).

[^265]:    - Information and statistics dealing with this subject have been supplied as follows: aids to navigation, canals, harboura, administrative services, and marine services by the Department of Transport and the National Harbours Board; the St. Lawrence Seaway by the St. Lawrence Seaway Authority: part of the financial statistics by the Department of Public Works; shipping subsidies by the Director of Subsidized Steamship Services, Canadian Maritime Commission; and canal traffic and statistica of shipping by the Tranaportation and Publie Utilities Division, Dominion Bureau of Statistics.

[^266]:    I Includea Pointo Noire.

[^267]:    ${ }^{1}$ Minimum depth of Seaway canals is 27 feet and minimum width 200 feet. Wiley. Dondero canal and two locks near Massens, N. Y. are in United States territory; dimensions are approzimately the same as those of Canadian lacilities. ${ }^{2}$ Notice must be given by veasels of more than six-foot draught.
    ? With Lake Ontario at elevation of 243 feet.

[^268]:    ${ }_{1}$ Inciudes naval vessels.
    2 Upbound passengers in all types of vessel numbered 3,960 and downbound 4,267.

[^269]:    ${ }^{1}$ First year of operation under Nakional Harbowra Board.

[^270]:    * Prepared by J, R. K. Main, former Director of Civil Aviation, Department of Trapsport, Ottawa.

[^271]:    * See also p. 75.

[^272]:    * Prepared in the Mineral Resourves Division, Department of Energy, Mines and Resources, Ottawa.

[^273]:    * Subsections 1 and 3 to 6 of this Section were revised in the Telecommunications Branch of the Department of Transport, Ottawa; Subsection 2 was revised in the Transportation and Publie Utilities Division, Dominion Bureau of Statistics.

[^274]:    - Prepared by M. E. Callin, P. Eng., New Producte Manager, Switching, Power and Customer Producte, Northern Electric Company Limited, Montreal.

[^275]:    The Avalon Telephone Company Limited
    Maritime Telegraph \& Telephone Company Limited
    The New Brunswick Telephone Company Limited
    The Bell Telephone Company of Canada
    Manitoba Telephone System
    Saskatchewan Government Telephones
    Alberta Govemment Telephones
    British Columbia Telephone Company.

[^276]:    ${ }^{1}$ Excludes channel mileages sometimes included in previous years; aleo, in 1963 -65 data twere collected for underground cable rather than for underground conduit as previously.

[^277]:    ${ }^{1}$ Twin cable from Clarenvilie, Nfid. to Oban, Scotland, and single cable from Clarenville, Nfid. via Terrenceville, Nifd. to Sydney Minea, N.S.; licensed for operation by two carriers-COTC and ET\&T.

    Increased demand for all types of overseas telecommunication services resulted in the COTC reporting a net profit of over $\$ 2,500,000$ for the year ended Mar. 31, 1966. Income for the year amounted to $\$ 17,967,279$.

[^278]:    - See also the item on Air Traffio Control. pp. 850-851.

[^279]:    *Teatual information in this Subsection was revised by the Canadian Broadcasting Corporstion, the Board of Broadcest Governors and the Canadian Association of Broadeasters; statistical data were prepared by the TraneDortation Division of the Dominion Buresu of Statistica.

[^280]:    ${ }^{1}$ The CBC charges its operations with depreciation, but deducts the charge on its published statements; the charge so made has been added to the government grant. $\quad{ }^{2}$ Excludes advertising agency commissions, eatimated to be $\$ 12,986,238$ in $1963, \$ 14,919,132$ in 1964 and $\$ 17,585,786$ in 1965.

[^281]:    *The introduction to this Section contains certain staternents appearing in an article by Stuart Keate, Honorary President of The Canadian Press, published in Press Journal.

    An article in the 1957-58 Year Book traces developnents in Canadian journalism from their beginnings in 1752 to (circe) 1900. A second article appearing in the 1959 edition brings that account up to 1958.

[^282]:    ${ }^{1}$ Weekend newspaper．${ }^{2}$ Includes one weekend newspaper．
    ${ }^{4}$ Bilingual．$\quad$ Includes 12 bilingual and 13 weekend newspapers．
    newspapers．
    ${ }^{3}$ Includes four weekend newspapers．
    ${ }^{-}$Includes 12 bilingual and 14 weekend

[^283]:    I Net revenue from advertising excludes commissiona paid to recognized advertising agencies and all cash dis. counta; net revenue from subscriptions and sales excludes commisaions paid to indirectly employed sales agente Who are not regular employees. 1 Escludes telephone directories published by telephone companiee.

[^284]:    * Prepared in the Merchandising and Services Division, Dominion Bureau of Statistics.

[^285]:    ${ }^{*} V$ Vo. VI (Pt. 1) Census of Merchandising: Retail Trade (Series 6.1). VoL VI (Pt. 2) Census of Merchandising: Wholesale Trade: Services (Series 6.2). Special subjects series.
    1.-Operating Results of Selected Trades for Incorporated Wholesale Establisbments, as Percentages of Sales, by Type of Operation and Kind of Business, Census 1961

[^286]:    I Includes other establishmenta not classified. operations.
    : Figures withbeld to avoid diselosure of individual

[^287]:    ${ }^{1}$ This item designated as "Farm wagons, bozes and sleighs" in 1964. dairy machinery and equipment" in 1984.

[^288]:    ${ }^{1}$ Components may not add to totals because of roanding. individual operations.

[^289]:    ${ }^{2}$ Figures withheld to avoid disclosure of

[^290]:    ${ }^{1}$ Fewer than $50,000 \mathrm{bu}$.
    ${ }^{2}$ Includes bagged beed wheat and wheat flour in terms of wbeat.

[^291]:    * More detailed information is available from DBS annual report Livestock and Animal Products Statittics (Catai logue No. 23-203), and the Canada Department of Agriculture publication Livestock Market Review. Statistics of livestock and poultry production and disappearance are given on pp. 470-483.

[^292]:    ${ }^{1}$ Incladea Newiondland for the first time. $\quad 2$ Fed calves discontinaed Jan. 1, 1965; included with steera and heifers. 3 Butcher calves not reported separately before 1965 . $\quad$ Grass calves discontinued Jan. 1 , 1965; included with medium and common, all weigbts.
    ${ }^{5}$ Includes injured hogs, ridglings and stags.

[^293]:    *Revised in the Transportation and Public Utilities Division, Dominion Bureau of Statiatios.

[^294]:    ' The 1965 increase reflects largely the commencement of operations by the Wabush Lake Raitway.

[^295]:    * Prepared by W. J. MacLeod, Secretary of the Board of Grain Commissioners for Canada, Winnipeg, Man.

[^296]:    *Revised by R. L. Kristjanson, Executive Assistant, The Canadian Wheat Board, Winnipey, Man.

[^297]:    *Prepared in the Economics Branch of the Canada Department of Agriculture, Ottaws.

[^298]:    * Revised by D. H. W. Henry, Q.C., Director of Investigation and Research, Combines Investigation Act, Department of the Registrar General, Ottawa.

[^299]:    * Revised by the Standards Branch, Department of Trade and Commeroe, Ottawa
    $\dagger$ Revised by the Commissioner of Patents, Ottawa.

[^300]:    * Revised by the Commiasioner of Patenta, Ottawe,

[^301]:    * Revised by the Registrar of Trade Marks, Department of the Registrar General of Canada, Ottawa.
    $\dagger$ Revised by the Dominion Coal Board, Ottawa.

[^302]:    ${ }^{1}$ Includes summary administration provisions of the Bankruptey Act.

[^303]:    * Details of weighting and construction and historical series appear in DBS publications Price Indez Numbers of Residential Building Materiols, $1926-48$ (Catglogue No. 62-505) and Price Index Numbers of Non-residential Building Materials, 1985-52 (Catalogue No. 62-506). Revised item list and weighting for the electrical component of the residential building materials index, effective July 1960, is available on request.

[^304]:    ${ }^{1}$ Base Mar. 21, 1959-Mar. 20, $1960=100$.

[^305]:    * A comprehensive description of the index is contained in the publication The Conoumer Price Indez (1949:100) -Rovision Based on 1957 Expenditures (Catslogue No. 62-518).

[^306]:    - Prepared by A. M. Cold, Assistant Director, Economics Branch, Department ol Trade and Commerce, Ottawa

[^307]:    * All values herealter are in international units (=\$U.S.).

[^308]:    * International trade data are compiled according to the Standard Industrisl Trade Clagsification (SITC) Which differs somewhat from the Canadian commodity classification. For example, lumber, pulp and synthetic rubber are considered crude materials in SITC whereas in the Canadian classificstion they are considered fabrieated materials; SITC combines crude and processed "energy materinis" into a separate group, whereas in Canadian data they remain with other materials.

[^309]:    *Based on statiatical reports published by the External Trade Division, Dominion Bureau of Statistics.

[^310]:    ${ }^{1}$ Includea Alaska and Hawaii.

[^311]:    ${ }^{1}$ Less than $\$ 500 . \quad 2$ Included with British Middle East, n.e.s.
    ${ }^{4}$ Included with Malta and Gozo.
    ${ }^{5}$ See Aden and Trucial States. ${ }^{7}$ Includes Kuwait.
    ${ }^{3}$ Included with Saudi Arabia. wealth and Preferential Countries". ${ }^{7}$ Includes Kuwait. ${ }^{8}$ Included with Britith "Totals, Common ${ }^{9}$ Formerly Nyasaland. ${ }_{10}$ Included with Rhodesia and Nyasaland. ${ }_{11}$ British Africa, n.e.s. Malawi. ${ }^{13}$ Formerly Southern Rhodesia. ${ }^{14}$ See Northern Rhodesia. Southee Zambia. ${ }^{12}$ See land. ${ }^{15}$ See Zambia, Rhodesia and Malawi. ${ }_{18}$ See Tanzania. ${ }^{19}$ Formerly Tanganyika. ${ }^{20}$ Formerly Northern Rhodesia.
    French Africa, n.e.s. ${ }_{22}$ Included with Portuguese Africa, n.e.s.

[^312]:    1 Included with French Africa, n.e.s. $\quad{ }^{2}$ Less than $\$ 500$. 4 Included with Malaysia. ${ }^{6}$ Ineluded with Viet-Nam. cluded with Indis.

[^313]:    ${ }^{1}$ Includes Alaska and Hawaii.

[^314]:    ${ }^{1}$ Less than $\$ 500 . \quad{ }^{2}$ Included with British Middle East, n.e.s. cluded with Malta and Gozo. ${ }^{5}$ See Aden and Trucial States. wealth and Preferential Countries', ${ }^{7}$ Includes Kuwait.

[^315]:    ${ }^{1}$ Formerly Nyasaland. $\quad 2$ Included with Rhodesia and Nyasaland.
    ${ }^{3}$ See Zambia.
    ${ }^{4}$ See

    Malawi. ${ }^{5}$ Formerly Southern Rhodesia.
    land. $\quad{ }^{7}$ See Zambia, Rhodesia and Malawi.
    ${ }^{10}$ See Tanzanis. ${ }^{11}$ Formerly Tanganyika. ${ }^{8}$ See Rhodesia. Included with Kenya.
    ${ }_{15}^{15}$ Formerly Northern Rhodesia. ${ }^{13}$ Less than ${ }^{15}$ Included with Portuguese Africa, n.e.s. ${ }_{16}$ In-
    \$500. ${ }^{14}$ Included with French Africa, n.e.s.
    ${ }^{17}$ Included with Viet-Nam.

[^316]:    1 Less than 8500.

[^317]:    1 Less than $\$ 500$.

[^318]:    1 Less than $\$ 500$.

[^319]:    ${ }^{2}$ Leea than $\$ 500$.

[^320]:    1 Less than $\$ 500$.

[^321]:    * Prepared in the several branches and agencies concerned, and collated in the Trade Publicity Branch, Department of Trade and Commerce, Ottawa.

[^322]:    * Information relating to rate of duty and value ior duty is available from the Department of National Revenue. Customs and Excise Division, which administers the Customs Aet and the Custome Tariff.

[^323]:    t Includes substantial amounts of in-transit, commuting and local traffic.

[^324]:    ${ }^{2}$ Excluder Hawaii.

[^325]:    * Except as otherwise indicated, revised in the Governments Division. Dominion Bureau of Statistics.

[^326]:    ${ }^{1}$ Federal payments to the provinces for the federal ahare under the Old Age Assistance Act. of old age agsistance penaiona to individuals. ${ }^{2}$ Old age security pensions to individuals.
    , Payments ${ }^{5}$ Consists largely of contributions to homes for the aged.

[^327]:    * Revised (August 1968) in the Taration Division, Department of Finance, under the direction of F. R. Irwin, Direotor of the Division, and by the provincial autborities concerned.

[^328]:    *The original agreement provided for abatements of 19 p.c. in 1965 and 20 p.e. in 1966 . However, following a federal-provincial conference in April 1984, the provinces were granted an additional two percentage points in 1965 and four percentage points in 1966 .
    $\dagger$ The original agreement was for a 50 -p.c. abatement. However, at the conclusion of a federal-provincial conference in late 1983. it was increased to 75 p.c. in respect of deaths occurring after Mar. 31, 1964. Currently, only the estates of domiciliaries oi British Columbia qualify for the full 75 p.c. abatement. Quebec and Ontario estates are temporarily eligible for only 50 p.c. because these two provinces have decided for the time being to take a payment from the Federal Government on account of the additional 25-p.c. abatement rather than to increase their aucesasiot duty rates.

[^329]:    * Family allowances are monthly weliare payments by the Federal Government to the parents or gardians of children under 16 years of age. The allowance is 36 for each child under 10 years of age and $\$ 8$ for each child between thesges of 10 and ib. These silowanceg are not subject to income tax. Psyments are also made in respect of children between the ages of 16 and 18 in jull-time attendance at educational institutions; sueb payments of $\$ 10$ a month are called youth allowances. The right to deduct $\$ 550$ for a dependent child is not affected by the receipt of these youth allowances.

[^330]:    *Raised in December 1966 to $\$ 240$, effective Jan. 1, 1967.

[^331]:    * Authority has been granted to extend in certain circurnstances the date by which these buildinge or structares must be completed.

[^332]:    *This concession for new manufacturing or processing businesses is also available to individuals.
    $t$ This tax is also payable on business and rentai income of trusts.

[^333]:    * Bee footatet, p. 1020.
    $\dagger$ Raieed in December 1966 to 9 p.c., effective Jan. 1, 1967, bringing total sales tax to 12 p.c.

[^334]:    * Applicable only to wines manufactured in Canada. The customa tariff on wines includes a levy to correspond with these tares on domestic production.

[^335]:    *See also pp. 1000-1010.

[^336]:    " The provincial mark-up over the manufacturer's price is not considered a 'tar'" in DBS financial statistics, but forms part of the "profita of government business enterprises".
    † Gasoline and diesel fuel used by primary producers-farmers, Gishermen, manufacturers and processors-is erempt from tan as is also gasoline and motor fuel used by owners or operators of registered pleasure craft.
    t Some relief from tanation is given where gnaolitue or fuel oil is used for farming, manufacturing, commercial fiahing and other off-highway parposes.

    G Cenerally, fuel oil used for agricultural and induatrial purposee is erempt from tax.

[^337]:    I Includes old age becurity tazes.

[^338]:    
     to the Town of Oromocto. Grant to City of Ottawa re interest on debentures isgued to finance certaingewer and waterworks projects undertaken in advance of normal construction.

[^339]:    ${ }^{1}$ In addition, the government has an indeterminate contingent liability in respect of rental guarantee contracte which in 1964 amounted to approximately $\$ 14,629,600$. Agsinst this amount was a reserve oi $\$ 3,901,429$ held by Central Mortgage and Housing Corporation. ${ }^{2}$ These contingent lisbilities are expressed in Canadian dollara; tbey are payable solely in United States doljars and are converted on the basis of $\$ 1$ U.S. $=\$ 1.08108$ Canadian. ${ }^{3}$ As reported (in accordance with Sect. 45 . National Housing Loan Regulations) by approved lenders at Dec. 31, 1964. ${ }^{\text {Includea contingent lisbility in respect of paymenis to non-participsting provinces. }}$

[^340]:    ${ }^{1}$ Includes old age security tax.

[^341]:    ${ }^{1}$ Includes old age security tax.

[^342]:    ${ }^{1}$ Excludes tax credited to the old age security fund.

[^343]:    * Prepared (December 1966) in the Federal-Provincial Relations Division, Department of Finance, Ottawa.

    Additional Readinge:-
    Donald V. Smiley, Conditional Grantsand Canadian Federalism (Canadian Tax Papers No. 32), Toronto, Canadian
    Tax Foundation. February 1963. Federsl-Provincial Relationa Division, Department of Finance, Federol Provincial Conditional Grant and Shared-Cost Programmes, 1982, Ottawa, Queen's Printer, October 1963, 33 (Cataloque No. F2-2563). Appendix to House of Commons Debates of Sept. 10, 1964. Statutes of Carads
    1964-65, c. 54.

[^344]:    I Provinces excepted are shown in parenthesis.
    ${ }^{1}$ As here used, 50 p.c. may mean the province must contribute 50 p.c. of the cost of the project or must match the federal contribution.
    ${ }^{3} \mathrm{~F}=\mathrm{a}$ maximum limit set to the federal ahare; $\mathrm{P}=\mathrm{s}$ maximam limit to the provincial share; and $\mathrm{O}=$ federal and provincial shares are open-ended.
    4 Sourcr: Public Accounts of Canada, 1864-65.

    - Not uniform.
    ${ }^{4}$ Provinces to provide administration, eervices, facilities, land, loans or to undertake a specifio portion of the project, etc.
    ${ }^{7}$ Represents the provincial and/or municipal share.
    - Each government undertakes to carry out an aspect of the program and bear the costa aspoeiated with that aspect.
    - Provinces to maintain eristing level of expenditures.
    ${ }^{20}$ Share for provision of services only.
    ${ }^{1}$ Diobursement made by Central Mortgage and Housing Corporation as Federal Government agent.

[^345]:    ${ }^{1}$ Escludes debt retirement.

[^346]:    ${ }^{1}$ Taxed under the general sales tax．

[^347]:    1 Excludes bonds assumed by the provinces.

[^348]:    ${ }^{2}$ Includes surplus from previous years (see Table 32).
    33).

[^349]:    1 Ertimated.
    : Chargea co debentnres isoued for sohool purposes are ineluded herein and not under Education as in 1960-62; for Quebee these charges have been

[^350]:    - Sections 1 and 2 were prepared in the Nationsl Aocounts, Prodnction and Productivity Division, and Sections 3. 4 and 5 in the Balance of Psymenta and Financial Flows Division of the Dominion Bureau of Statiatica. Seetion 0 was prepared by the antborities concerned.

[^351]:    * Indexer of Real Domestic Product by Induatry of Origin, t9s8-6t (Catalogue No. 81-505). This paper provides a detailed explanation of concepts, uses and limikations, data sourcea, methodology, etc., and oovers a much wider range of industries than provided in this Section. Current quarterly data are published in DBS monthly Inder of Industrial Production (Catalogue No. 81-005).
    $\dagger$ See Revised Inder of Industrial Production, 1985-67 (Catalogue No. 61-502) and the current monthly publication Index of Industrial Production (Catalogue No. 61-005), totether with its 1966 Annus) Supplement which contains historical revisions to the inder of induatrial production and ite componenta for the 1949-68 period.

[^352]:    ${ }^{*}$ See footnote * on previous page.

[^353]:    - DBS Catalogue No. 61-202. See Appendix II of the 1963 issue for census value added in manufacturing (all activities) 1961,1962 and 1863.

[^354]:    ${ }^{5}$ Exaludeo agricultare.
    Columbis,

[^355]:    - See DBS Reference Paper Indezes of Output per Person Employed and per Man-Hour in Canada, Commercial Non-agricultural Industries, 1947-6s (Catalogue No. 14-501) and the first subsequent annual publication Indezes of Outpul per Person Employed and per Man-Hour in Canada, Commercial Industries, 1346-65 (Catalogue No. 14-201).

[^356]:    ${ }^{1}$ Calculated by fitting a atraight line to the logarithros of the data using the least squares method.

[^357]:    - More detailed information is given in DBS annual report Canadian Balance of International Payments and International Investment Position (Catalogue No. 67-201) and in Quarterly Estimates of the Canadian Balance of International Payments (Catalogue No. 67-001).

[^358]:    - Commodity trade statistics have been adjusted to refect more closely the timing of transactions, particularly for investment goods, and to exclude commodities wish sre either covered elsewhere in the accounts or are not pertinent for balance of payments purpoeen.

[^359]:    *An extended historical review appears in DBS report Canada's International Investment Position, 1926 to 1954 (Catalogue No. 67-503) and more recent statistics in the annual report Canadian Bolance of International Paymento ond Inernational Investment Position (Catalogue No. 67 201). Additional detailed material will be found in the annual report under the Corporations and Labour Unions Returns Act.

[^360]:    1 Excludes short-term receivables and payables. I Includea international investment agencies.

    - Country distribution not available. $t$ Includea about $9900,000,000$ of finance company obligationa, some of which were in earlier years shown as long-term investments.
    ${ }^{6}$ Includes reaerve against inactive assets. .
    which were Government of Canada holdings of gold and foreign exchange.

[^361]:    ${ }^{1}$ Includes some investments held for residents of other countries.
    River Treaty receipts.

[^362]:    ${ }^{2}$ Includes $\$ 273,000,000$ of Columbia

[^363]:    - Economic Council of Canada, First Annual Review: Economic Goals for Canada to 1970. Queen's Printer, Ottawa, December 1964. $\$ 3.50$ (Catalogue No. EC 21-1/1964).

[^364]:    * Economic Council of Canada, Second Annual Reviev: Towards Sustained and Balanced Economic Growth. Queen's Printer, Ottawa. December 1965. \$2.75 (Catalogue No. EC 21-1/1965), Economic Councit of Cansda, Third Annual Review: Prices, Productivity and Emphoyment. Queen's Printer, Otiawa. November 1966. $\$ 2.75$ (Catalogue No. EC 21-1/1966).

[^365]:    "It is apparent, first, that while it is customary to speak of the North as a vast singie region of severe climate, empty distance, and harsh geography, it is in fact an area of very considerable diversity. It comprises a significant number of different regions, or subregions, marked by quite diverse geographic and climatic conditions, possessing varying potentials, facing differing problems, and entering into different stages of economic and social developnent. Any over-all policy for developing the North must necessarily take adequate account of this diversity, and selective programmes must be adapted to the particular needs and prospects of the varied subregions.
    "A second distinct impression is that while the land is vast, virtually unpopulated, and forbidding in many aspects, it undoubtedly possesses significant resources. True, the importance of renewable resources of agricultural land and forests is very limited. But there is no question of the presence of rich and varied mineral resources, including iron, base metals, industrial minerals and fuels. A number of important deposits have already been successfully brought into production; others have been located and are being tested; and the probability is great that further exploration and investigation will continue to yield new and important finds. The whole process of discovery would be stepped up by increased research and the further development and application of new techniques for exploration.
    "The longer-run development of the North depends essentially upon the success achieved in the economic exploitation and use of these mineral resources. In this regard it seems clear that some subregions are now approaching the stage of commercial utilization much more rapidly than others. This is generally true of the Yukon and parts of the Western Arctic, not only because more is known as to the existence and quality of resources in these places, but also because difficulties of access, transportation and climate are less formidable than in other areas.
    "Even for the more favoured subregions of the North, however, there are two major obstacles to be overcome. The first is the problem of providing transportation and of undertaking the very large capital investments involved in the building of the transport facilities needed to move heavy, primary commodities over long distances to potential markets. Tbe steady extension of such transport links, probably pushing up through the northern reaches of some of the provinces, may well be expected; but careful, long-run national planning will be essential to ensure the best use of available funds and to avoid potentially costly errors. The second problem is equally important. It will require imaginative approaches and special efforts to deal with the particular difficulties of living and working on a permanent basis under northern conditions. This is not just a matter of overcoming a relatively inhospitable climate and supplying the conventional amenities, but even more of providing the kinds of advanced services and the social environment which will help to alleviate a sense of isolation from the advantages of modern urban life. Unless these difficulties can be resolved, it is hard to see how the human resources and human skills necessary for productive development can be attracted and successfully held in the new communities of the North.
    "Finally, no visitor to the North can help but be seized by the serious plight of the native people. Whatever the reasons, the impact of modern civilization upon the culture and way of life of the Eskimo and northern Indians has been sudden, drastic and disruptive. Their problem today is both difficult and urgent. The need to improve their economic and social condition, and at the same time to assure them of a rightful participation in the future development of the North, constitutes a pressing challenge to the people of Canada today."

[^366]:    - Economic Council of Canada, A Declaration on Manpower Adjustments to Technological and Other Change. Queen's Printer, Ottawa. November 1966. \$0.75 (Catalogue No. EC 22-866).

[^367]:    * Revised by the Research Department of the Bank of Canada.

[^368]:    "To promote the economic welfare of Canada by increasing the effectiveness of monetary action through ensuring the availability of credit to industrial enterprises which may reasonably be expected to prove successful if a high level of national income and employment is maintained, by supplementing the activities of other lenders and by providing capital assistance to industry with particular consideration to the financing problems of small enterprises."

[^369]:    ${ }^{1}$ Includes investments; the change in loans outstanding does not equal the difference between disbursementa and repaymenta because of year-end accounting adjustmenta.

[^370]:    1 Includes, in 1966, chartered banks' notes \$8,214. Dominion of Canada notes \$4,637, provincial potee $\$ 28$ and defunct banks notes $\$ 88$; these amounts have changed little in recent years.

[^371]:    ${ }^{1}$ Tombac, a copper-zinc alloy, was used to conserve nickel for war purposes; no coins of this metal have been issued since 1944.

[^372]:    * Revised by the Master of the Royal Canadian Mint, Ottawa.

[^373]:    * More detail is included in an article appearing in the 1961 Year Book, pp. 1115-1120, prepared by J. Douglas Gibeon, General Manager of The Bank of Nova Scotia. The early history of currency and banking in Canada is given in the 1988 Year Book, pp. $900-905$. A list of the banks at Confederation appears in the 1940 Year Book, p. 897 , and bank absorptions since 1887 are given in the 1941 edition, pp. 812.813 . A table in the 1937 Year Book, pp. 894895 , shows the insolvencies aince Confederation; the last insolvency occurred in 1923 .
    $\dagger$ The Bank of Weatern Canada and the Bank of British Colombia were chartered by Parliament but had not commenced operstions as of Feb. 28, 1967.
    $\ddagger$ The larger Canadian banks have long maintained offices in London and New York. In addition, some Canadian bantas for more than half a century bave been providing an important part of the commercial banking lacilities in the Caribbean srea (see Table 10, p. 1129).
    tt At time of writing. the Bank Act revision was before Parliament; see Chap. XXVII, Pt. V, outlining Federal
    Legislation, $1966-67$.

[^374]:    * Such loans were almost entirely a postwar innovation in Canadian lending practice, and had increased markedly during the easy-money period of 1954-55. Since 1956, term lending has been generally confined within narrower limits, although it is still practised when conditions permit.
    $\dagger$ See footnote $\dagger \dagger$, p. 1125 .

[^375]:    * Prepared by the Research Department of the Bank of Canada in co-operation with the Superintendent of Insurance for Canada.

[^376]:    ${ }^{2}$ Profits beiore income tares.

[^377]:    1 Includes companies chartered by the Government of Nova Scotia which, by arrangement, are inspected
    a Book value of real eatate for company use and other real eatata. Includes interest due sud accrued and other assets. - Includes surplas. to the public.
    ${ }^{6}$ Exclusive of Nova Seotia.

[^378]:    t Includes companies chartered by the Governments of Nova Scotia, New Brunswick and Manitoba, which, by arrangement, are inspected by the Iederal Department of Insurance. $\quad$ Includes other assets. $\quad$ Includes interest due and accrued. ${ }^{\text {a }}$ Book value of real estate for company use and other real estate. ${ }^{5}$ Includes other company fund lisbilities. Chartered by all provinces except Nova Scotia, New Brunswick and Manitaba (see text, p. 1136).

[^379]:    *Prepared by the Research Department of the Bank of Canada in co-operation with the Superintendent of Insurance for Canada.
    $\dagger$ See Business Financial Statistics (Catalogue No. 61-006). More complete data on the business of licensed lenders are given in the Report of the Superintendent of Insurance for Canada on Small Loans Companies and Mone\%Lenders for the year ended Dec. 31, 1905. (Catalogue No. In 3-4/1965.)

[^380]:    *The gold sovereign remained the standard for the Canadian dollar until 1910 when the currency was defined in terme of fine gold, making it the exact gold equivalent of the United States dollar. Both Britith and United Btates gold coins were, however, legal tender in Canada lor this whole period.

[^381]:    * Noon quotations. Daily highs and lows may have exceeded these rates.
    $\dagger$ The operations of the Foreign Exchange Control Board from the time of its establishment to the termination of exchange control in December 1951 are reviewed in the 1941 to 1952-53 editions of the Year Book.

[^382]:    *Prepared (November 1966) by the Central Clasaification Research and Development Staff of the Dominion Bureau of Statigtice, using data published by the Bank of Canada, and from the Budget Papera, Mar. 29, 1966.

[^383]:    1 All ahort-term commercial borrowing is included in the "All other resident" item.

[^384]:    * Material in this Part, except as otherwise indicated, was prepared under the direction of the Superintendent of Inaurance for Canada, Ottawa. More detailed data are available in the annual reporte of the Department of
    Insurance.

[^385]:    ${ }^{1}$ Registered or licensed reinsurance deducted from all companies.

[^386]:    ${ }^{1}$ Excluden forest fires and Federal Government property lossea.

[^387]:    - Revised in the Government Annuities Branch, Department of Labour, Ottawa

[^388]:    * Prepared (December 1966) in the Office of the Deputy Minister, Department of National Defenge, Ottawa.

[^389]:    ${ }^{1}$ Equivalent ranks are given on p.1171. $\quad 2$ Incentive pay increases, at rates that vary with length of service, may be granted to an officer when he has met predetermined performance standards. othcer entitled to marriage allowance immediately prior to Oct. 1, 1966.

[^390]:    ${ }^{t}$ Equivalent ranks are given on p. 1171.
    may be granted to a man when ho has met predetermine pay increases, at rates that vary with length of aervive, service, except for "Private" at pay level 4 (aee footnote ${ }^{\text {a }}$ ). ${ }^{3}$ Payable after seven years of service. iRsio 6 (B) applies to corporals who are appointed to apecific eatablighment poeitions that entail additional reapossibility.

[^391]:    - Prepared in the Information Division, Department of Defence Production, Ottawa.

[^392]:    * 3nilitary construction is the prime function of Defence Construction (1951) Limited (see p. 147).

[^393]:    ## Biography

    Barnard, Julienne. Mémoires Chapais, Montréal, Fides, 1961-64, 3 v.
    Barrette, Antonio. Mémoires. T. 1. Montréal, Beauchemin, 1966. 448 p.
    Beal. J. R. The Pearson phenomenon. Toronto, Longmans, 1964. 210 p.
    Biographies canadiennes-françaises. 20e éd. Montréal, 1965. 1347 p.
    Bishop, Morris. Champlain; the life of fortitude. Toronto, McClelland and Stewart, 1903. 308 p . (Carleton library, no. 4)
    Bisgop, W. A. The courage of the early morning, a son's biography of a famous father: the story of Billy Bishop. Toronto, McClelland and Stewart, 1965. 211 p.
    Bodceard, T. D. Mémoires de T. D. Bouchard. Montréal, Beauchemin, 1960. 3 v. Braddon, Russell. Roy Thomson of Fleet Street. London, Collins, 1965. 396 p.

[^394]:    Nfld., P.E.I., N.S., N.B., Man., Sask., Alta,:-Depts. of Labour
    Que.:-Dept. of Lebour
    Bureau of Statistics Economic Research Bureau

[^395]:    * Extracts from the Canada Gazette, with oome addition. All academio and honorary degrees and military honours bave been omitted.
    t See also Appendix I.

[^396]:    * Parliament adjourned Mar. 22, 1967; the first eession continued on Apr. 3, 1967.

[^397]:    1 Lesa than 500.

